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These NOTES are distributed by mail to all members of the NEW YORK SHELL CLUB, Inc. Dues: Full membership $4.00 per year, $1.50 additional for each of other members of the same family -- with one copy of NOTES per family. Corresponding membership $2.50 per year. A limited number of back issues of the NOTES are available at $.30 postpaid per single copy; also bulk rates. Items and articles for publication in the NOTES should be sent to the Editor. The Corresponding Secretary should be notified promptly of any change in your address.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MAY 12th, 1974, at 2:00 P.M.

PROGRAM: SHELL COLLECTING IN THE SOLOMON ISLANDS
by Dr. R. Tucker Abbott, Chairman, Dept. of Mollusks
Delaware Museum of Natural History

SHELLS-OF-THE-MONTH: The Radula of *Micromelo undata*
by Mart Hulswit

A news item re *Batillaria*, by Milton Werner

Discussion of plans for field trip.

SUCCESSFUL PARTY

Thank you for making the party of April 21st a success, both socially and financially. To those who brought, to those who bought; to those who worked with plans, procedure, and clean-up; for everyone's help and enthusiasm, we thank you.

Sincerely, Dorothy Raeihle, President

SHELL AUCTION. Shells from the George Jacobs collection will be offered at an auction sale on Sunday, June 2nd at 1:00 PM at the Broadway Dance Studio, 3108 Broadway, Astoria, New York, the same place as the Club Social. Viewing starts at 12 o'clock. Further information will be sent by mail.

Lina Jacobs

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A REMEDY FOR MARINE HAZARDS

Dear Dot and George (Raeihle) March 19, 1974

I am enclosing an article on the Keys which I thought you might find interesting, (if discouraging) and perhaps pass the info on to the club in case anyone is coming down this way. As I always said, the dearth of shells is not the fault of shellers (tho there are some vandals no doubt) but the fault of big business and building, etc.

I also had an article on the dangers of the man-o-war - instances of killing etc. The point is that they state there is no known antidote for the poison they secrete and advise to rush a person to the hospital, as there is nothing that will alleviate the pain of the contact. But in this I know from my experience they are wrong since I had a violent encounter with a Portuguese Man-of-War when the one tendril encircled my ankle. The pain was something like a dozen wasp stings all around my ankle -- like fire and immediately it becomes inflamed and swollen. We were at the beach at St. Croix at the time and all I could think of was an old article which said to use BLUING! That was old, since Bluing is no longer used for whitening clothing and we could not get it at the market when Jerry dashed in. But we did have vinegar and since that had alleviated the pain caused by sea urchin spine (which is very similar) I put a compress of that on my swollen ankle and within a few minutes the pain began to subside and the swelling began to go down. I was feeling fine in about a half hour. In that article they talk of hospitalizing victims who get it on their arm or leg. We never go shelling any more without vinegar and I am surprised that this homely remedy is not known to lifeguards. This was first brought to our attention when I stepped on one of those long-spined black urchins at St. Croix. The spine broke off in the foot (my instep) and I thought it would have to be probed for to get it out. The owner of the motel went to the kitchen and got a bottle of vinegar and told me to keep a compress on my foot, and sure enough in a matter of minutes the pain stopped and I could walk again. The vinegar dissolved the sea urchin's barb. I am sure I told you this story before -- but I repeat it because I feel that anyone going to the Islands, or anywhere they will encounter these animals, should have this along as an antidote. It is, I feel, worthy of space in the newsletter. Incidentally, we have fire ants in our back yard and I have encountered them twice now and that pain is the same (in miniature) as the secretion of the man of war! It burns and leaves a blister which appears the next day, and the wound will stay with you for almost a week before all signs of it disappear. I have a healthy respect for those tiny animals and never go barefoot any more in the grass! Here again, I run for the vinegar and it relieves the pain but the wound stays tho only about as big as a mosquito bite -- were you ever stung by red ants? The acid (or whatever it is) that they secrete must be similar to the sea animals since it is just as violent in nature; luckily for us it is a small mini dose!

Love Grace McDougall

DISCORD IN PARADISE II.

Morris K. Jacobson

This is the second of a series dealing with malacological disputes of the past. It should be recalled that we plan to deal only with those where one or both of the disputants clearly lost their tempers and resorted to less than gentlemanly language. We attempt to make no decisions regarding the validity of the points of view; the purpose of these short accounts is psychological rather than malacological.

In 1931 a short and spirited exchange took place between Dr. Frank C. Baker of the University of Illinois and Professor Bohumil Shimek of the Iowa Academy of Sciences concerning some names applied to Pleistocene fossils as distinguished from Recent forms. It began when Shimek somewhat testily rejected the subspecific name rubella Green 1832 for living forms of Hendersonia occulta (Say 1831). Morrison (Naut. 43:45) had reported rubella as occurring in Crawford Co., Illinois. Green had suggested that the varietal name rubella be applied to living forms of H. occulta which Say had described as a fossil. Shimek properly pointed out that color, one of the main differences, cannot be a criterion since "the fossil shells are bleached, and the modern forms vary greatly from light horn-colored, through lemon-colored and light red, to deep brick red" (ib. 43:11). Other characteristics were equally variable. "To separate the living forms as a named variety," Shimek went on, "gives an impression of difference which does not exist...Manifestly there is no excuse whatever for a varietal separation of the fossil and modern forms where both exhibit the same range of variation." Now, if Shimek had left his point at that, nothing would have happened. But the professor chose to extend his remarks. If such a rule (i.e. that modern and fossil forms should all be separated) were "to be followed, then all the fossils...should be segragated under separate names, a procedure which has already gone too far."

Although Shimek did not mention Baker's name at all, the latter recognized that the barb in the last sentence was directed at him. Baker flew to his own defense. He accused Shimek of not comparing "the recent with the fossil forms carefully or else (making) up his mind that there is no difference and (wishing) to 'stand pat.'" (ib. 44:21). He then cited a few species to prove that such differences do exist and then warned dourly "to call such...forms the same species is a contravention of the truth and renders classification valueless," a rather unjust widening, one would think, of Professor Shimek's point. Baker went on to say that he had "no controversy with Professor Shimek on account of his opinion," but he did object "to the dogmatic manner of stating that his opinion represents the truth and that all those who differ with him in this respect are mistaken."

These "caustic" remarks, as he called them, roused Shimek's ire. He accused Baker of careless reading and of doctoring quotations to give a wrong impression. By omitting a crucial the, Shimek charged, Baker made him sound as though he objected to all differentiation of Pleistocene from Recent loess species whereas he was only talking of

of H. occulta. "Truly," he went on, "Mr. Baker appears very much in the light of a Don Quixote fighting an imaginary foe." (ib. 44:40). Then he really proceded to sail in: "Throughout his paper Mr. Baker casts reflections on the carefulness and fullness of my observations. Of course, this is only surmise on his part and and may be another illustration of his characteristic hastiness, but it comes with poor grace from one who has blundered so often in his loess discussion and references. From the very first his advent into this field has been unfortunate." (ib. 43:39). Shimek has "no objection to Baker's playing with minor variations and applying names to express them, excepting that it clutters up the synonymy, -- a favorite pastime with some ultramodern students of shells." As far as I could discover, Baker never chose to answer.

Baker's splitting propensities aroused the displeasure of several other writers too. In 1929 Calvin Goodrich wrote, his humorous tone ill concealing the annoyance he must have felt, "Consider the instance of differentiation of two river mussels by subspecific designations because one of them, from the headwater to the middle reaches of a stream, has a calculated obesity of 47% or less, and the other, occurring further down, has an obesity in excess of 47%. Is a man with a waist line of 48 inches any less a member of his species than a man whose midriff measures 42"? (ib. 42:118).

MORE USES FOR MOLLUSK SHELLS. Club member Ella Mazel sends in the following items which she found in a book published in London in 1782 and entitled: PLOCACOSMOS:/ OR THE/WHOLE ART/ OF/ HAIRDRESSING;/ WHEREIN IS CONTAINED,/ Ample RULES for the YOUNG ARTIZAN./ MORE PARTICULARLY FOR/ LADIES, WOMEN, VALETS, &c. &c./ AS WELL AS/ Directions for Persons to dress their own HAIR:/ ALSO/ Ample and wholesome Rules to Preserve the Hair.

(Ed. Note: there are about 20 more lines to the title, which we omit).
by JAMES STEWART.

Dr. Harris has an express treatise on the acute diseases of children, De morbis acutis infantium. He takes them all to arise from the humors in the prima via growing sour, and degenerating into acidities; which is confirmed by their sour belches and dejections. Hence, all that is required to cure them, is to combat this acidity, which is to be effected two ways; by disposing it to be evacuated, and by actual evacuation, by rhubarb and other gentle purgatives. To dispose the peccant acid for evacuation, no sudorifics or cordials are to be used, those remedies being too violent; but magnesia, crab's eyes and claws, oyster-shells, cuttle-fish bones, egg-shells, chalk, coral, pearls, bezoar, burnt ivory, scrapings of unicorn's horns, Armenian bole, terra figillata, lapis haematites, and the confection of hyacinth. But of all these, he prefers old shells that have lain long on the side of the sea, exposed to the sun, which is better than any chymical furnace.

From the beginning of the century, to the year 1745, the hair in private life was worn in the most simple manner..... Soon after the above

date, we find, the French curls made their first appearance in Paris, and, consequently, soon after, here. ...Some time after, came up the scallop-shell, or Italian curls, as also the German. The scallop, or shell, were curls in three rows, done back from the face, in their several shapes. The German were a mixture of scallop-shell and French in the front, curled all over behind.

MY FIRST SHELL COLLECTING

Cathy Grey

I am a member of the New York Shell Club and I am writing to tell how I got interested in shell collecting.

My family and I lived in Jamaica, W. I. for two years. During that second half of our stay, we were driving along a main road by the ocean. We saw an opening in the roadside and drove in. It was the rocky coast of the island, completely uninhabited by people. We decided to have a picnic and so brought some friends, but unfortunately other people started to get the same idea. Smashed on some rocks, were the remains of about 10 pink conchs. While my parents and I looked down the coast, my brother cried, "Look what I've found." On a gigantic pile of worn beach pebbles, each one no bigger than the nail on your thumb, were millions of shells of every kind. Many were worn down, but many still had their color. In some tissues I brought back about 100 of these shells. I got a local book published by the Shell Factory of Fort Myers, Florida and I identified many of them, and the pictures of the others intrigued me. Among them I found the following: *Conus mus*, *Acmaea testudinalis*, *Trivia pediculus*, *Columbella mercatoria*, *Mitrella lunata*, and *Polinices lacteus*. On another trip I found *Arene cruentata*, *Oliva sayana*, *Thais deltoida*, *Terebra cinerea*, *Cantharus auritula*, *Cypraecassis testiculus*, *Cymatium vespaceum*, *Bursa granularis*, *Bulla occidentalis*, *Arca zebra*, *Anadara notabilis*, *A. lienosa floridana*, *Anomia simplex*, *Tellina lineata*, *T. tampaensis*, *Donax variabilis*, and *Spirula spirula*.

On other trips to other places with no names in Jamaica, I found live specimens of *Strombus gigas*, *S. raninus*, *Fissurella barbadensis*, *Cypraea zebra*, *Nerita versicolor*, *Conus regius*. Others recently dead were: *Leucozonia nassa*, *Glycymeris pectinata*, *Modiolus americanus*, *Chlamys ornatus*, *Divaricella quadrisulcata*, *Anodontia alba*, *Trachycardium muricatum*, and *Chione cancellata*. All these are in my collection, some few, some many. I am pleased Jamaica has a large salt water fauna.

P. S.: All this collecting was done by strolling along the coast. Diving would probably bring a wider selection.

The next convention of the AMERICAN MALACOLOGICAL UNION will take place in Springfield, Massachusetts from August 4th to 8th. This, the 40th annual meeting, is so near the New York area this year, that Club members should consider strongly attending. It's a wonderful education in malacology.

FROM THE MINUTES OF THE MARCH MEETING

In a letter to the Club, via Corresponding Secretary Dorothy Germer, Alice Barlow informed us that her exhibit in the Sanibel shell show had won the Du Pont award. The exhibit, featuring shells that have been pictured on postage stamps, is the one Alice displayed in the Club's show at the Bergen Community Museum.

Historian Nick Katsaras, still in a Silver Anniversary mood, read from a 1957 issue of Shell Notes a history of the Club, written by its founder, Dr. Walter Jacobs. Nick then brought everyone abruptly back to the present by holding up to view a magnificent specimen of Voluta bednalli, from New Guinea.

Karl Jacobson read a letter from Carol Stein, of the University of Ohio, stating that construction is planned in an area which is the only habitat of some interesting freshwater mussels. She requested that the Club write officially to the Ohio Dept. of Natural Resources urging that Big Darby Creek, in central Ohio, be given State Scenic River status, which would protect the habitat. It was voted that this be done. Karl also observed that the New York City area has not lost any molluscan species since 1844.

The Shell-of-the-Month, presented by Bob Janowsky, was the genus Pterynotus. He showed slide photos of the many species in this muricid genus, which are characterized by three winglike varices. He noted that shells of this type appear in the fossil record of 50 million years ago, and that today they live in the western Pacific and Atlantic, but are not found on the eastern edge of either ocean. Bob ended his slide series with the traditional sunset, but with a difference. His, on close examination, proved to be a closeup of the outer lip of P. phyllopterus.

Bill Old, the main speaker, fulfilled his promise that he would repeat his travelogue on Ameripagos '71 -- a scientific collecting trip to the Galapagos. The reason for the promise was that he had not been able, the first time, to assemble all of the slides he felt would be interesting. Those that he showed in his encore included shells, birds, turtles, iguanas and penguins. The second vicarious tour of Darwin Station, Academy Bay, Santa Cruz Island, etc. was as enjoyable as the first.

Milton Werner

ARTICLE OF THE MONTH

In central California, Dr. Stoner B. Haven has shown in controlled field experiments conducted on the microalgae of the intertidal splash zones that limpet grazing strongly limited the algal crop most of the year and interspecific competition (exploitation type) for food limited growth rates and maximum size in Acmaea scabra. These interesting conclusions are set forth in an article entitled "Competition for food between the intertidal gastropods Acmaea scabra & Acmaea digitalis" in Ecology 54: 143-151, 1973. Furthermore, removal of A. digitalis from fenced exposure plots resulted in growth increases in A. scabra, correlated with increases in algal food supply.

Henry D. Russell

We are proud to note that Club member George Raeihle gave an illustrated lecture on shells at the Fairleigh Dickinson University Earth Science Colloquium Film Festival "Discovery '74" on Saturday April 20. The title of his talk was "Shells and Shores of the East Coast." About 80 persons were present and enthusiastically applauded George's magnificent presentation.

While engaging in a rather tedious project, Xeroxing all of the issues of the New York Shell Notes to have my own complete set, I was delighted to find in my mail the North Carolina Shell Club Bulletin No.7. That may sound like the non sequitur of the year, except for one thing: on page 37 of that paper I discovered an article "A Listing of Shelling Trips as Described in the New York Shell Club Notes" by Hugh J. Porter of the University of North Carolina, Institute of Marine Sciences. Dr. Porter has made a geographically arranged index of all of the Shelling Trip reports that we have published through Issue #193 (June July-August 1973).

If Dr. Porter feels that the members of another club can benefit from the experiences of our members, it would seem that we can all be very proud of the efforts of our several editors and of the membership too for the kind of useful information we have in our Notes.

Frank Nelson, Vice-President

CONCHOLOGISTS OF AMERICA, BULLETIN 1, editor Mr. Frank Nelson, has just been received. Among other things, it contains the constitution of the new national organization. The third annual convention will take place June 13-16 at the Edgewater Inn, in Seattle, Washington. More details can be obtained from: Mrs. Dorothy Janowsky, 946 Ralph Avenue, Brooklyn, New York 11236.

REVIEW: Seashore Life Coloring Book by Anthony D'Attilio. Dover.$1.25. This is a series of 46 plates in outline including more than 200 individual drawings with miniature color plates for each one suggesting the colors that might be used. They truly represent the overwhelming artistic talent of Mr. D'Attilio and each plate, if carefully colored either following the artist's suggestions or one's own tastes, will make a truly outstanding wall decoration. The publishers note that "Mr. D'Attilio prepared these drawings carefully and accurately, but in the interest of making the plates as decorative as possible, he did allow himself some artistic license. Thus the specimens on one plate are not necessarily found in the same body of water and occasionally their relative sizes are not strictly correct." This is therefore a book for the art lover rather than the strict naturalist, but no sensitive person can remain indifferent to its intrinsic beauty. The perfect arrangement of the drawings on each plate and the sweep and flow of the individual creatures, cannot help but arouse the admiration of everyone, even in the uncolored outline form. This little booklet cannot be too highly recommended.

mkj

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NEXT MEETING: SUNDAY, JUNE 9, 1974, at 2:00 P.M.

PROGRAM: COZUMEL AND YUCATÁN, A MAYAN SHELL SAFARI

by Mart Hulswit

SHELL-OF-THE-MONTH

ANNUAL ELECTIONS

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ELECTIONS

The election of officers for the term September 1974 - June 1975 will be held at our June 9th meeting. Past President Mart Hulswit is acting as chairman of the nominating committee. Please send your nominations to him at 680 West End Avenue, New York, N. Y. 10025.

ANNUAL FIELD TRIP AND OUTING

At our May 12th meeting the members present voted to hold our annual field trip and outing on Saturday, June 29th, at Hay Beach, Shelter Island, New York. This locality is near the Eastern end of Long Island, about 2-1/2 hours by car from Manhattan. SEE PAGE 7 FOR DIRECTIONS.

Veronica Parker Johns, of Seashells Unlimited, Inc. has once again agreed to serve as car pool intermediary this year. If you can offer a ride, or need a ride, please relay information through her at 212 LE2-8690. On behalf of the Club, many thanks for her kindness!

FROM THE MINUTES OF THE APRIL MEETING.

The April meeting was the Club's annual social meeting. and was again held in the Broadway Dance Studio, Astoria, Queens. Attendance, the highest ever, was 99 members and guests.

An auction of 220 shells from the collection of the late George Jacobs was announced. The date will be June 2, and members will receive letters giving full information.

Vice President Frank Nelson announced that the silver anniversary medallions were on hand. The first to be distributed were complimentary pieces, presented by President Dorothy Raeihle, to the founders of the Club, charter members and past presidents. For their special services to the Club, complimentary presentations were also made to Drs. William K. Emerson, R. Tucker Abbott and Henry Coomans, and, for her late husband, to Mrs. Fred Toblemen.

Auctioneer Bill Old then swung into the first of the special activities of the meeting, disposing of a large selection of shells and associated materials donated by members and the American Museum of Natural History. Among the outstanding items were a framed ink rendering of *Conus marmoreus* by member Leo Hernandez, a number of color prints of shell photos by member Ken Sanger, two plates from Thomas Martyn's "The Universal Conchologist", specimens of *Cypraea teulerei*, *Cassis tuberosa*, *C. cornuta* and *Strombus peruvianus*, and shells from the Calvert and the George Jacobs collections.

Frank and Lee Nelson and John and Chris Lyons conducted transactions at the sale table.

The artistic feature of the day was a showing of slide photos made by George Raeihle. Most were close-ups of living specimens, many of them residents of Mrs. Raeihle's aquaria. Especially spectacular were high magnifications of radulae, egg cases and embryos, and newly hatched snails. Breaking away from a tradition he pioneered -- the sunset finale -- George instead followed a shot of a sunrise tellin with one of a startlingly similar sunrise scene, and followed these with other gorgeous sunrises.

The door prizes were an eight-inch *Conus prometheus* donated by Mrs. George Jacobs, a fine *Cypraea teulerei* donated by Dr. Donald Bosch, and a magnifier-on-headband given by Mrs. Jacobs. The raffle prize was a copy of "The Living Cowries", by C. M. Burgess, donated by Seashells Unlimited, Inc.

The final enjoyments of the day, as usual, were a cocktail hour and an excellent buffet supper, topped off with home-made cakes.

Milton Werner, Rec. Sec'y.

SHELLS OF NEW GUINEA AND THE CENTRAL INDO-PACIFIC by Alan Hinton, 1972, reviewed in NYSC NOTES No. 198, page 6. We are sorry to advise that this highly recommended book is no longer available. A flood reached the warehouse of Jacaranda Press, destroying their stock of copies. There appears to be no plan to reprint the volume.

ON THE OYSTER DRILL

In a very interesting and thorough study by Dr. David R. Franz of Brooklyn College (Biol. Bull., 1971, vol. 140, pp. 63-72) entitled "Population Age Structure, Growth and Longevity of the Marine Gastropod *Urosalpinx cinerea* (Say)" the author shows that in the Mystic River near Noank, Connecticut, the Oyster Drill lives on the following marine invertebrates besides oysters: barnacles (*Balanus balanoides*), sea mussels (*Mytilus edulis*), periwinkles (*Littorina littorea*, and some bryozoan Ectoprocta. This type of feeding proves to be beneficial for the increase of the Drill populations since, to quote Dr. Franz, "diversification of prey is an advantage to the predator since it leads to a reduction in competition for food between juveniles and adults." This must be sad news to oyster farmers. Dr. Franz also notes that the shell of the Drill shows age rings or *annuli* by which the age of the specimens can be determined, much like the count of tree rings can give the age of a tree. However, in the Drill these annuli are often not very useful "because of difficulty in discriminating annuli from interruptions caused by other factors" such as damage to the outer lip. In the case of older Drills, recognizing annuli becomes particularly difficult "because of erosion of the spire and partial masking by subsequent shell growth of a portion of the earlier annuli." By using other methods of determining age, Dr. Franz found that 70% of maximum shell growth is attained after two years in the life of the snail. As far as longevity of *Urosalpinx* is concerned, the author only tells us that snails older than 5 years "constitute a very small proportion of the total population."

SHELLS ARE WHERE YOU FIND THEM

What do you do on a snowy Friday in February, when you are pounding the cold slippery sidewalks - instead of walking along a nice tropical beach, picking up rare shells?

This longing brought me to a pet shop in a nearby town; we needed bird seed. The shop has some very lovely marine aquariums and we never tire of looking at the colorful tropical fish they contain. Today it was a little different: In a corner of one of the tanks was a hermit crab in a very pretty shell -- and as I looked at that shell my hands started to shake.

Trying to hide my eagerness from the shop owner, I inquired, "How much for that hermit crab?" "Only a dollar ninety-eight plus tax." "Wrap it up, I'll take it." The shell was a 2½ inch *Mitra florida* Gould, in perfect condition!

You can be sure that this gal will be heading back to shell the "Great Barrier Reef" in that pet shop again. Who knows, maybe someday they might have a crab housed in another rare shell!

Dot Germer

SURF CLAM / MOON SNAIL STUDY

Linda Barton and Ana Rosenblum
Bellport High School

Early in September 1973 over 300 specimens of surf clams, Spisula solidissima (Dillwyn 1817) were taken from the ocean beaches of the south shore of Long Island at Quogue, New York. Some were washed ashore while others were found living in the sand at surf line. Several specimens were dissected. The lengths of 45 valves (from side to side) and widths (from hinge to ventral edge) were measured and they averaged 6.6 cm and 4.4 cm respectively. Length was plotted as a function of width, and the relationship was found to be linear. In a sample of 234 valves there was an average of 3.1 deep ridges per valve with numerous shallower ridges between. The number of deeper ridges seemed to increase with the size of the valve. These ridges are a possible indication of the clam's age.

When held up to the light, the valves appeared somewhat translucent at or near the umbo. This suggested that the thickness varies in different parts of the valves. Measurements were taken with a micrometer and it was found that the valves were consistently thinner near the umbo than at the edge. A total of 11 valves were measured and showed an average thickness at the umbo of 0.64 mm, at the middle 0.89 mm, and at the edge 1.09 mm.

Several of the valves observed had deep inclusions. These were smooth inside and normally layered on the outside. When the inclusions were broken open, small pockets of sand or grit were revealed. These were probably irritants that had been sealed off by the mantle from the soft body parts. (See Rozsa 1971, NOTES 173, p. 3. Ed.)

Fifty-one moon snails, Polinices heros (Say 1822) were collected at the same time and place as the surf clams. Several specimens were dissected, and the radulae removed and studied under a microscope. Of the 51 snails, 34 were female and 17 male. Thus this represents a ratio of 1 male: 2 female.

Limited observations have shown that a surf clam will "jump" when approached by a moon snail from certain positions. It is evident that after a clam is caught, the snail's radula, with the help of an accessory boring organ which weakens the shell matter at a single spot, drills a hole through the shell of the clam. In all the valves that were drilled, the holes were located at the umbo, (See Jacobson, 1968, NOTES 140, p. 6. Ed.) the thinnest part of the shell, as has been shown. The snails seemed to show no preference for left or right valves. In a sample of 191 drilled valves, about 47% of the right and 53% of the left valves were drilled.

Eleven valves had holes that were only partially completed. These holes were of the same diameter as the completed. This suggests that that predator was disturbed before the drilling was completed.

This study of the relationship between surf clams and moon snails has answered some questions and raised many more; it is not clear why the clams are drilled near the umbo, nor if a clam can detect a snail's

approach. Additional research is needed to understand more fully these relationships.

We would like to thank our teacher, Mr. Arthur P. Cooley, Jonathan Shore for his computer programming, Thomas Van't Hof for his artwork and the Advanced Biology classes for their help in compiling this study.

A SYMPOSIUM ON LITTORINIDS

A one-day Symposium on Taxonomic Trends in the Littorinidae was held at the Royal Scottish Museum, Edinburgh, on Tuesday, March 19th. The Symposium, the first restricted to this family of the prosobranch Gastropoda, was chaired by Sir Maurice Yonge and attended by 37 people with interests in the Littorinidae. Talks were presented on a range of littorinid topics; probably the most noteworthy contribution was unpublished evidence given by Dr. J. Heller that the polymorphic species *Littorina saxatilis* (Olivi) should be regarded as containing at least four separate species.

The meeting unanimously endorsed the suggestion that an informal Littorinid group should be formed, with an international membership, as far as possible comprising all workers actively interested in these gastropods. This idea had previously received postal support from over 20 others, mostly from abroad, who were unable to attend the meeting. Anyone wishing to learn more about the group should write to the appointed coordinator, Charles Pettitt, Manchester Museum, The University, Manchester M13 9PL, England.

At the meeting Mr. Pettitt displayed a proof copy of the Indexed Bibliography of the Family Littorinidae (Gastropoda:Mollusca) 1758-1973 compiled by him and now published by the Manchester Museum (M. M. Publication N. S. 4.74). This bibliography printed in A4 size with 'plasticised' covers, contains about 730 references to worldwide Littorinidae; there is a subject and a general systematic index, with a special index of new generic and specific descriptions. The price is £0. 75p. but the author has arranged that individual workers and members of recognised conchological societies may order a personal copy at cost price, £0. 50p; to both prices should be added 8p. postage in U. K., 15p. overseas. Requests should be sent to Charles Pettitt, at the above address; cheques etc., should be made payable to Manchester Museum.

ARTICLE OF THE MONTH

The ecological distribution and commercial importance of New Zealand's three species of abalone (*Haliotis iris* Martyn, 1784; *H. australis* Gmelin, 1790; and *H. virginea* Gmelin, 1790) are discussed by Gary G. B. Poore in an article entitled "Ecology of New Zealand Abalones, *Haliotis* species" appearing in the New Zealand Journ. Marine & Freshwater Res. 6: 11-12, June 1972. *H. iris* and *australis* prefer red algae, the latter being an active feeder due to the limited amount of food, while the former has an almost continuous supply of drift seaweed.

Henry Russell

FRESH WATER PEARL BUTTON INDUSTRIES

Fred Tobleman

(Ed. Note: An undated article found among deceased charter member's papers. Most buttons are now made from plastics. American pearl shells are still used by the Japanese as the center for cultured pearls.)

Buttons were made of salt water pearl shells long before they were made from the shells of freshwater mussels. Numerous attempts had been made to manufacture buttons from them but all were failures because of lack of proper machinery. It remained for Mr. J. F. Boepple, a turner and button maker of Ottensen, Germany, to make the first buttons from shells given him by a fellow worker, who said they came from America near Chicago. Mr. Boepple experimented at odd times and after a year sold his business and came to the United States, bringing his lathe and tools with him. In 1887 he was making shell novelties and in 1891 started a button factory with William Mollis and R. Kerr at Muscatine, Iowa.

So much for the history of the industry. Let us look at the making of buttons, starting with the collecting of the shells and the methods the shellers use. The first method is to drag a crowfoot dredge which is an iron pipe 3/4" or 1" in diameter and 12' to 20' long, with rollers on each end, to which the crowfoots (four-pronged hooks with beaded tips -- Ed.) are attached by short lines. The crowfoot dredge is worked from a johnboat -- a workboat built like a scow, square-ended fore and aft. The dredge is lowered from the stern as the boat drifts down the stream aided by a "mule" which is a sail used under water to utilize the current for added power. (See NOTES No. 89, p.6, 1963. Ed.) The second method is to use a dip net with a scraper worked with a long handle and a rope. A boat with two men and a boy can collect 1,500 to 2,000 pounds of shells in half a day. The third method is tonging, the long-handled shell tongs worked in the same manner as those used for oysters. Fourth is a dredge that works like a pair of scissors; it can be worked in shallow streams from a catamaran equipped with a winch. Also, a coke fork can be used.

The catch is taken ashore, cooked and sorted. The one doing the cooking keeps a sharp lookout for pearls, slugs, and baroques. Thin and off-color shells are rejected; the commercially usable shells go to a cutting plant where the blanks are cut out by a tubular saw run in a lathe as a stream of water plays on the saw -- different size saws being used for the different buttons. The blanks are ground to the desired thickness and then go to an automatic machine which drills the holes and carves and edges them. Finally they are polished, then carded and packed in boxes for the trade.

Of the many species of freshwater mussels in North America, only 41 with thick, hard shells can be classed as of commercial value. The shells of quite a few species found in the Mississippi drainage can be used for buttons, as the material these shells are composed of is not thin like the shells of the Atlantic coast streams.

NOTES AND NEWS

The Western Society of Malacologists will hold its next annual meeting at the Kellogg West Conference Center, California State Polytechnic College, Pomona , California from June 19 to 22, 1974.

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Unitas Malacologica Europaea will hold its fifth congress in the Museo Civico di Storia Naturale in Milan, Italy from September 2 to 8.

****

Dr. R. Tucker Abbott informs us that the new edition of AMERICAN SEASHELLS, a volume of more than 600 pages, is expected to be ready late in 1974.

****

The AMERICAN LITTORAL SOCIETY -- Metropolitan New York Chapter announces their participation in the Gateway Conservation Festival May 18, 1974, a 12-hour happening at the Canarsie Pier to celebrate the opening of the Gateway National Recreation Area. (BMT-LL to last stop; transfer to free bus. Please, no cars.) The first meeting of the NY chapter will be held June 1, 1974; morning session 10:30 - 1:00 at Brooklyn War Memorial Auditorium, Cadman Plaza Park, with the afternoon session to feature various workshops and outings. (ALS, Sandy Hook: Phone 201-872-0200.)

****

SHELL DESK DIARY FOR 1975 -- Prepaid orders are now being taken for the 16th edition of the Shell Desk Diary, 160 pp., hard cover, color photographs, engravings. To order, send $2.50 for each copy desired to Shell Oil Company, One Shell Plaza, Room 1536, Houston, Texas 77001. Closing date for orders is July 31, 1974. The Diaries will be mailed in November.

****

FIELD TRIP DIRECTIONS: A low tide of -0.2 will occur at about 1 PM. It is recommended that you arrive early enough to work at least an hour of the outgoing tide. Bring lunch, complete with thermos, also sneakers or other sturdy-soled footwear for wading, and your shelling gear. (There will be no bath house facilities for changing clothes.) MR. & MRS. BERNARD JACOBS have graciously given permission for our group to have access to their beach, which is on the northeast coast of Shelter island, facing Gardiner's Bay.

DIRECTIONS: From Greenport, take the ferry to the island. Follow Route 114 through town to Winthrop Road. Turn left on Winthrop and over a bridge to Cobbetts Lane; right on Cobbetts Lane to its end, which is Ram's Island Road. Turn left following Ram's Island Road, which becomes Gardiner's Bay Drive; follow to Dawn Road and the Jacobs residence at the water. See you there!

NYSC NOTES NUMBER 203 JUNE-JULY-AUGUST 1974

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NEW YORK SHELL CLUB NOTES No. 203 June-July-Aug. 1974 Page 1

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, SEPTEMBER 8, 1974, at 2:00 PM

PROGRAM: SHELLING IN PANAMA (with color slides)
by Alba and Joseph Bao

REPORTS OF SUMMER ACTIVITIES

SHELL-OF-THE-MONTH

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PLEASE NOTICE: As of September, 1974, dues will be increased to $4.50 for full membership for individuals, and to $3.00 for corresponding members, the minimal raise necessary to cover present higher costs of materials for these NOTES.

ANNUAL ELECTIONS: Mart Hulswit, chairman of the nominating committee, conducted the election in which members voted into office for the coming season Frank J. Nelson as president, Veronica Parker Johns as vice president, and Dorothy Janowsky as corresponding secretary. Incumbents reelected were Treasurer Mathilde Weingartner and Recording Secretary Milton Werner. Nick Katsaras will continue as historian, Harold Feinberg as librarian, and Karl Jacobson as editor. Retiring President Dorothy Raeihle thanked everyone for their cooperation during her term of office and introduced the very capable staff.

SPECIAL SALE: Those wishing to obtain back files of NYSC NOTES at bulk rates should advise Dorothy Raeihle as soon as possible of the series desired, designating by years or by "No. xxx through No. xxx," for pickup, cash and carry, at the September meeting. Quantities are limited. Earliest series are broken, first numbers out of stock.

THE INDEX: Our thanks to Milton Werner, without whose interest and perseverance there would be no index for NOTES 151 - 200. After his laborious groundwork of alphabetizing entries for five years, the Raeihles managed the typing, paste-up, and printing arrangements.

dr

WILLIAM S. MURPHY

We are sincerely sorry to report the loss of our friend and member Bill Murphy, who died quietly on May 15. He was 78, but his keen interest and enthusiasm belied his years. Bill served as vice president of the New York Shell Club during the season 1970-1971, but declined a second year because of the conflict of an increasing number of business trips.

His obituary in the New York Times of May 16 included the following notes: "William Storey Murphy was a retired foreign exchange broker who had headed his own firm in the financial district for many years. He was assistant in charge of silver with the War Production Board in World War II. ...Mr. Murphy was a 1918 graduate of Harvard and was an ambulance driver for the American Field Service in France during World War I, receiving the Croix de Guerre and the Purple Heart."

We shall miss his presence and his contributions of wisdom and encouragement. We join his many friends in mourning his passing and in extending sympathy to his family.

FROM THE MINUTES OF THE MAY MEETING.

Two members, moved by different moods, set up displays on the front table before the meeting opened. Nick Katsaras laid out about 20 specimens that he had collected in one minute's time from the Asbury Park (N.J.) beach, a few days after a storm. Several were toys, most were plastic, and all, under the circumstances, were trash. Al Zenker's contribution was a visual antidote -- a selection from his fine collection of pectens, and a delightful sight to see.

Armed with a map of Long Island and notations from the tide tables, President Raeihle plunged into the annual agonizing over possible sites for the field trip. A half-dozen were discussed, but this time one proved to have a clearly decisive appeal. Sol Weiss had approached friends who reside on Shelter Island, and they had gamely invited us to swoop down on their beach, and line up at their bathroom. The locality is only a long swim from good old Orient Beach, but the situation, at least, will be novel.

The Shell-Of-The-Month was a fascinating footnote to Mart Hulswit's presentation on Micromelo undatus. With slides he had not had on the previous occasion, Mart showed us what a microscope had revealed to him of the radula of this miniature beauty. Somewhat fan-shaped, it is 24 teeth wide and only 21 rows long.

The main speaker was Dr. R. Tucker Abbott, who described, with the aid of slides, a 1971 collecting trip in the Solomon Islands. He applied his high descriptive gifts not only to the conchological aspects of the venture, but to those segments of World War II history that are linked to the scenes he showed. Since "he was there" as a Navy pilot, he made these reminiscences an integral part of an especially fascinating narrative.

Milton Werner

ELISEO DUARTE RETIRES

Word just came to the Editor that Mr. Eliseo Duarte of Montevideo, Uruguay, because of advancing age, has decided to give up his post as secretary of the Sociedad Malacológica del Uruguay. This will be a matter of great regret because it was his infectious enthusiasm for the study of shells and alert, lively personality that were instrumental in founding the Society and establishing the group's COMUNICACIONES, one of the most effective and useful malacological publications in the world today.

The writer has enjoyed a long correspondence with Don Eliseo and appreciates well the devotion to shells and the warm human personality of this wise and gentle man. His activities as an enthusiastic participant in shell exchanges has enriched private and institutional collections with large lots of Uruguayan mollusks. I was early fascinated with the Purple Land, as the writer W. H. Hudson called it, the Banda Oriental del Uruguay, and still recall vividly the intense pleasure I felt as I unpacked the first shipment of land and freshwater shells sent me by Don Eliseo from that fabulous region.

We all wish this true shell lover many happy and restful years to enjoy the reputation which his earlier activities richly earned him and the continued admiration of his many friends throughout the world.

!Que todo siempre te vaya bien, querido y estimado amigo Don Eliseo!

M. K. Jacobson

RUSSIAN FRESHWATER MOLLUSCAN GENERA

Many articles on malacology are printed every year in the Soviet Union. For the last few years Dr. Kenneth J. Boss of Harvard and I have been listing these articles in English translation, with occasional brief resumées, in the VELIGER. In some articles we find that the Russian authors use colloquial Russian names for a genus instead of the international scientific names. We have thus found the following list of freshwater genera to be useful to us in our work, and hope it will prove useful to other students and at least entertaining to our general readers.

GENUS	RUSSIAN	DERIVATION
Lymnaea	proodoviki	prood - pond
Planorbis	katushki	katushka - reel or bobbin
Ancylus	chashechki	chashka - cup
Viviparus	zhivorodki	zhivo - live, rodit' - give birth
Valvata	zatvorki	zatvor - water gate or valve
Melampus	chernooshki	chorni - black
Neritina	loonki	loonka - small cavity or pit
Unio	pyerlovitsa	pyerl - pearl
Margaritifera	zhemchoozhnitsa	zhemchoog - pearls
Anodonta	byezzoobki	byez - without, zoob - tooth
Sphaerium	sharovki	sharavoy - globular
Pisidium	goroshinki	goroshinka - pea

NOTE: The underlined vowel bears the stress of the word.

mkj

BOOK REVIEW: The Compleat Naturalist/ A Life of Linnaeus, by Wilfred Blunt. Viking 1971. 256 pp., richly illustrated, including 30 color plates. $14.95.

Every shell collector has frequently come across the name Linnaeus (or Linné), as the author of many shell names, and beyond being aware that he was the "Father of Scientific Nomenclature" he or she knew little else. Even more learned people know little more. As the author of this biography writes: "It is ...hardly surprising that today few people outside Sweden know much if anything at all of the man and his work. Ask a reasonably well read Englishman what he can tell you about Linnaeus and you are unlikely to receive a very informative answer. Ask when he lived, and you may well be told that it was in "classical times", the Latin termination of his name being misleading; ask his nationality, and the chances are that the answer will be wrong." (In this connection it is interesting to note that there is a Linnaean Street in Cambridge, Massachusetts which, I am told, many citizens, thinking they are dealing with an Irishman, pronounce Lenehan or Linehan Street.) Mr. Blunt continues: "Many people will, however, probably associate his name with plants, and possibly even with the classification and naming of plants. But you will be lucky if you get more information than that." This handsome and interesting book suggests a reason why. Of the 27 important works which Linnaeus wrote, most American naturalists are familiar only with his GENERA PLANTARUM and SYSTEMA NATURAE, the works upon which our modern system of botanical and zoological nomenclature, respectively, are based. Very few of his interesting and important travel books are available to English readers and none of his philosophical speculations on nature. The result is that for most of us he is a cold, impersonal inventor of names, almost a primitive sort of mechanical computer, whose greatness we more readily take for granted than really understand.

Mr. Blunt's book changes all that. He shows us a fantastically hard-working individual who forced his way up from indigence to relative comfort, even affluence, by dint of sheer hard effort and a readily analytical mind that demanded order in the bewildering profusion and apparent confusion of nature. Blunt portrays a warm, sympathetic individual with whom the reader quickly empathizes -- a human being with his faults (endless -- but deserved -- vanity, impatience with any opposition, arrogant and distant in his family life), but nevertheless a man who made lasting friendships, who was supremely interested in the welfare of his many students, a witty and effective teacher and inspirer, and above all a tireless worker with infinite skill. Anyone who wants to see Linnaeus as a real person need go no further than this book. Here will be found Linnaeus in life size.

Something must also be said about the wealth of illustrations which much enhance the value of the book. Unlike most "gift" editions, which rely heavily on the illustrations alone and in which the text is frequently an unread -- and unreadable -- filler, in Blunt's work the text is the main thing, the pictures mere intensifiers. This is definitely not one of the countless "non-books", as they have been called, which, unread, weigh down the coffee tables of the nation.

On a minor matter, Blunt gives the reason for the two forms of the great naturalist's name. The name Linnaeus was formed by Carl's

grandfather to honor an old and stately linden tree ("lin" in the local dialect) which stood on his farm. (Originally no Swedes had family names, being known only, for example, as Nils the Son of Ingemar Nils Ingemarsson.) Carl called himself Linnaeus until 1761 when he was ennobled by the king and changed it to von Linné. In shell literature it is usually abbreviated to a simple L.

It must be clear that the great contribution of Linnaeus was his binomial system of scientific nomenclature: a generic name and a trivial name together forming the specific name. In other respects his work is less notable. One historian of Botany writes: "(Linnaeus) was content to know all his species exactly by name...he never made a single important discovery throwing light on the nature of the vegetable or animal kingdom." Mr. Blunt calls this a severe but not unjust judgment. Linnaeus's greatness, as Dr. W. T. Stearn wrote, is as an encyclopedist at an age when the great encyclopedias of the world came into existence, the encyclopedias without which scientific advance could not have come about.

One curious item in the book caught my attention. It concerned an English lord, Frederick Calvert "sixth and (fortunately)" as Blunt writes, "last Lord Baltimore (1731-1771)." He ardently admired Linnaeus, and travelled to Sweden to visit him. Lord Baltimore was a poet who earlier had dedicated a volume of Latin poems to his hero. One writer described him as "one of those worn-out beings, a hipped (crazy) Englishmen who had lost all moral and physical taste." Blunt goes on: "Two years before his visit to Sweden, Baltimore had been tried, but acquitted, on charge of'rape on the body of S. Woodcock and of E. Griffinburg, etc.'" He was also enormously wealthy and owned also the whole state of Maryland in America. Could this have been an ancestor of the John Calvert who assembled the famous Calvert Collection which was discussed in a recent number of the NOTES?

It is curious to note that, according to Sherborn (in his WHERE IS THE ---------COLLECTION?) that this John Calvert was said to have seduced two daughters of Sowerby II.

MKJ

ARTICLE OF THE MONTH

An interesting attempt has been made by Dr. D. H. Atapattu to define distinct patterns of shore zonations and their relation to mollusc fauna in an article entitled, "The distribution of molluscs on littoral rocks in Ceylon, with notes on ecology." This article appeared in Marine Biol. 16: 150-164, 1972 and explains that certain species were found distributed over the whole island, others were common to two groups of shores only, and others confined to a single shore type. A key, based primarily on external features, has been devised for the identification of the species listed.

Henry Russell

AS THE KIDS SEE IT -- TV Hostess: "How do oysters and clams eat?"

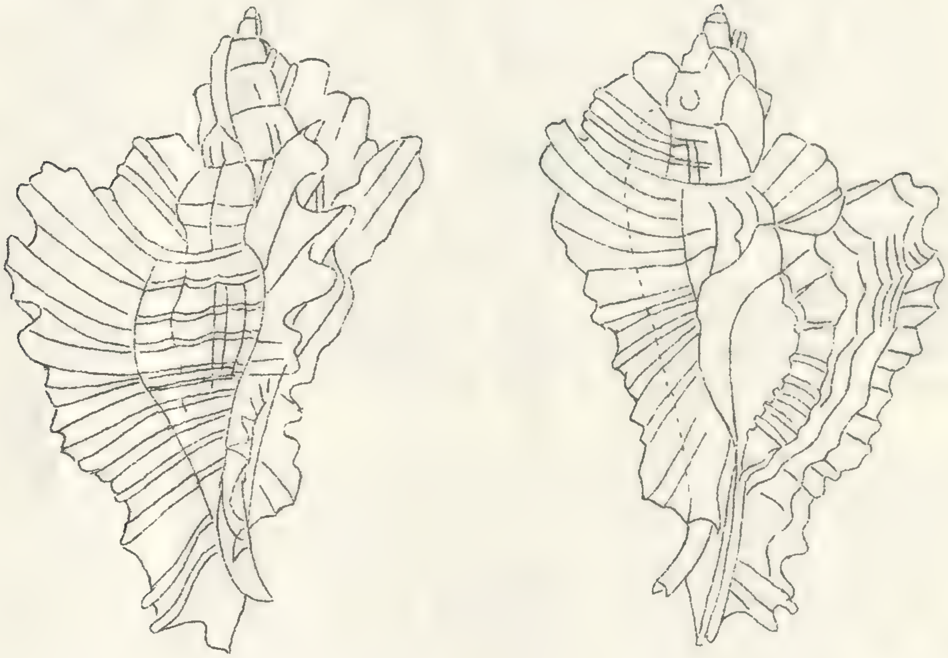
Child: "They open up their shells, see something coming along, and GRAB it!"

HAVE FUN WITH NATURE, N.E.T.

THE REDISCOVERY OF *MUREX PHYLLOPTERUS* LAMARCK 1822

Robert and Dorothy Janowsky

In 1822 Lamarck described *Murex phyllopterus* without an illustration and with no indication of where it was found. Several authors like Kiener, Poirier, Vokes, etc. supposed it to be an Indo-Pacific species. For about 150 years no other specimens were reported. (See VELIGER, April 1972, Vol. 14, No. 4, pp. 350-354.) We were delighted when we found some specimens of *M. phyllopterus* in Martinique. It came about in the following fashion:



Actual size.

Drawings by Anthony D'Attilio.

In October 1971 we were on our fourth collecting trip in the southern end of Martinique in the French West Indies. Conditions were not very favorable and hence we did little collecting. One afternoon we found ourselves in a mangrove swamp where we thought nobody ever came because of the large population of biting insects, the black, unpleasant water around the roots, a strong rip current, and an abundance of fire coral offshore. These made collecting elsewhere more pleasant.

As we were putting on our diving gear, we were surprised to see a lone snorkler approaching us. He came up and asked if we spoke French. We replied that we did, but poorly. He next asked if we were shell collectors and we falteringly replied that we were. Hearing our discomfort with French, he asked in perfect English if we could speak that language. He then introduced himself as Zoltán Buzás, a native of Munich, serving as a skin diving instructor at

the resort where we were staying. He had been collecting shells for only a few weeks and found it difficult to identify them. We offered to aid him as best we could. We asked if he had Hemifusus morio Linné 1758 in his collection, and pointed out a spot where we had collected good specimens of this strange black shell. We parted, and fifteen minutes later he swam over to us and showed us the largest specimen of H. morio we had ever seen. He had to return to give a skin diving lesson and we returned later to the hotel.

That evening we renewed our acquaintance with our new friend and discussed the species we had found. Our conversation went smoothly until he said that the most unusual specimen he had found was a 3½ inch Murex bequaerti Clench & Farfante 1945. We pointed out that this was indeed a find, since Martinique is far from the reported range of the species (deep water off Florida and in the Gulf of Mexico) and it was also three times larger than any specimen of which we had heard. We went to Zoltán's room to view this specimen. And there on the table, among many other local shells, lay the large and beautiful murex belonging obviously to the genus Pterynotus Swainson 1833. Zoltán told us that the shell had been identified by a more advanced collector, Patrice Marquis, who also had a specimen in his collection. We had no idea as to the identity of this murex, but we were sure it was not M. bequaerti. We were familiar with the genus Pterynotus and this shell was unlike any we had ever seen. Only three members of the genus are found in the Western Atlantic and we knew what those looked like. The probability that this was a new species became very strong in our minds.

Zoltán promised to introduce us to Patrice the following day. We spent a restless night and the next morning Zoltán escorted us to Patrice's room. Here again we saw the same murex which, unfortunately, had been found dead and had a hole in the dorsal part of the body whorl. It differed from Zoltán's specimen only by the fact that the denticles within the aperture were red rather than white. We were astounded when Patrice produced yet another specimen which he had found a few days earlier. Patrice, who spoke no English, had identified the shell as Murex bequaerti on the basis of a poor photograph, in a little book called FLORIDA SHELLS AND SHELLING, which superficially resembled his shell. This was one of the few books available to him. In a combination of French, English and sign language, and with the assistance of our German translator, we discussed our views with Patrice and offered to buy one of his specimens to take back to New York to study. He was reluctant to part with either of his specimens but he knew of another specimen whose owner might be willing to sell to us. We agreed on a price since no one could determine the value of an unknown shell and agreed to meet that evening in the bar.

We were early for our appointment and waited. Patrice came an eternity later and, smiling happily, handed us a small metal box which contained a remarkable Conus granulatus Linné 1758 and a superb specimen of the unknown murex complete with operculum. We had no need for a translator this time; our stupefied grins and bilingual inanities convinced Patrice that we were pleased. The shell never left our sight for the remainder of our stay in Martinique and our long flight back to New York. We were still firmly convinced that this

was a new species.

While we were in Martinique, Jean and Annick Gregory, who had collected there, brought several shells to Veronica Parker Johns' store "Seashells Unlimited" in New York for identification, including two freshly dead specimens of this Pterynotus. Veronica sought the aid of William Old and Dr. Emerson of the American Museum of Natural History. They in turn sought the advice of Anthony D'Attilio and Dr. George Radwin of the San Diego Museum of Natural History and the shell was identified as the long lost Murex phyllopterus of Lamarck. Thus not only was a lost species found again, but its true habitat was firmly established.

The specimen with the hole in the dorsum, formerly belonging to Patrice Marquis, is in the study collection of the American Museum. We obtained another specimen which is now in the Delaware Museum of Natural History. The soft parts of a specimen (which may not have been well enough preserved) are in the possession of Mr. D'Attilio who hopes to be able to extract the radula at least. Very few specimens of this species exist and we are happy that we played a small part in the rediscovery of this beautiful and unusual species.

AMERICAN MALACOLOGICAL UNION - - 40th ANNUAL MEETING SPRINGFIELD, MASSACHUSETTS, AUGUST 4 - 8, 1974 :

The American Malacological Union is an organization of about 800, divided as to professionals (scientists, museum curators, dealers, biology teachers, etc.) and amateurs. A convention is held once each year; last year in Delaware, this August in Massachusetts where the hosts will be the Connecticut Valley Shell Club and the Springfield Museum of Science. A yearly bulletin is sent to each member, giving news of the convention, reports by the speakers on the papers presented, a revised membership list and a list of affiliated shell clubs. Dues are $4.00 per year, payable in advance, and membership is open to anyone interested in the study of shells, the collection of shells, or in any subject related to mollusks. Family and friends of members are welcome to attend the annual conventions; you need not be a member to register. Shell club members find the programs of particular interest and benefit.

For the Springfield meeting, the advance registration fee is $7.00 (after July 15: $8.00); if you plan to attend the banquet, add $7.20 for a total of $14.20 and send your check, payable to the American Malacological Union, to Mr. Earl H. Reed, c/o Springfield Museum of Science, 236 State Street, Springfield, Massachusetts 01103.

Those arriving early may register Saturday, August 3rd, 2:00-5:00 PM. The opening session of presentations will start Sunday, August 4th, at 1:00 PM. Because of the gasoline shortage at the time the dates were set, the matter of a field trip was left for later decision.

The Stonehaven Hotel and Motor Inn, 70 Chestnut Street, is closest to the museum quadrangle where the meetings will be held. Their prices: $12 single, $16 double, $18 twin. Also nearby are Holiday Inn, Baystate West Motor Hotel, and the Springfield YMCA.

Plan to attend!

AUCTION OF SHELLS FROM THE GEORGE JACOBS COLLECTION

An auction of about 250 items - shells, coral and echinoderms - drew over 80 collectors to the Broadway Dance Studio in Astoria on June 2 for a full afternoon of intense bidding, mostly for individual specimens. Mrs. Lina Jacobs, as director, offered shells from the collection of the late George E. Jacobs, past president of the New York Shell Club. William Old, as auctioneer, was as always extremely helpful in supplying background information as each specimen was offered. A huge assortment of fixed-price shells on a "bargain table" disappeared entirely before the starting time of the auction, 1:00 PM.

Two Lyria - a 3½" kurodai and a 5" lyraeformis - shared top-price honors at $75. Third and fourth were Strombus taurus and Voluta exoptanda. Lyropecten nodosus was represented by four excellent specimens. There were outstanding Murex, notable Conus, a strong list of Cypraea, and choice Voluta.

A second auction of shells from the Jacobs collection is planned, but no date has been set. It is expected to include literature.

Milton Werner

AMERICAN SEASHELLS - SECOND ENLARGED EDITION

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NYSC NOTES NUMBER 204 SEPTEMBER 1974

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, OCTOBER 13TH, 1974, at 2:00 P.M.

PROGRAM: COLLECTING IN THE RAIN FOREST OF PUERTO RICO
by Frank Nelson

SHELLING IN THE FAROES AND ICELAND
by John Lyons

SHELL-OF-THE-MONTH

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Members of the New York Shell Club and other shell enthusiasts have been invited to participate in a special program on September 21st at 7 PM in the Broadway Dance Studio in Astoria, Queens. Mr. Abbott-smith of Australia will deliver an illustrated lecture on volutes and refreshments will be served. On September 22nd at 1 PM Nick Katsaras will conduct another of his autumn auctions in the same place. We wish that all who attend will have a very good time. But it should be made clear that the New York Shell Club as an organization had nothing to do with either the special program or the auction. The name of the Club was used in this connection through a regrettable error.

The recent Sanibel Shell Fair was acclaimed as having some of the finest exhibits ever shown at a shell show. We are proud to report that our members Dr. and Mrs. G. Barton Barlow were awarded the DuPont Trophy of the Delaware Museum of Natural History for the outstanding exhibit in the Scientific Division, Educational Class. Their exhibit was of postage stamps accompanied by specimen shells as depicted on the stamps, and was on display at the NYSC exhibit in Paramus last April. We are heartily in accord with the judgment that the Barlow exhibit is outstanding and most worthy of the trophy.

COLLECTING SOMEWHERE WEST OF FARO, PORTUGAL

Sandra Hunter

On June 11, 1971 I was traveling east toward Faro and was almost there when I saw a sign for Praia de Faro. Being a seasoned traveler of one week, I had already learned to associate "praia" with "beach". Being a seasoned shell collector, I had to investigate.

I passed acres of lovely mud flats and marshes, crossed a bridge over an inlet, and arrived at the beach. It was a grey, dismal day; and the beach had not one shell on it. However, as I turned from the beach, I saw a beautiful mud flat -- the shore of the inlet I had crossed. I went off to root and slog happily through the mud after the receding tide.

The flat at the upper end of the tidal zone was devoid of vegetation. However, there I found thin, twisting trails at the end of which lived *Bittium reticulatum*. They did not appear to live down near the low water line. On the pilings of the bridge were *Mytilus edulis* and a pair of *Murex erinaceus*. It seemed that the murex were feeding on the mussels.

In the middle zone of the flat there were scattered clumps of sea lettuce under which lived *Neritula neritea* and *Nassa reticulata*. In this area I also found *Cardium edule* which lived almost entirely exposed in the mud. The flat sloped gently down to the low water mark. There it dropped off sharply to an area subject to a rather strong current. Just below low water there was a thick growth of grass that looked like eel grass. A small amount of this grass grew just at the edge of the flat. Near low water *Cerithium vulgatum* lived buried in the mud. A *Natica catena* crawled along; a live *Epitonium communis* lay on the mud. Hundreds of *Turritella communis* began to appear. It seemed that they must live buried in the mud for when I first got to this area, there were none to be seen. However, at low tide they started to show up and just lie on the mud without crawling around.

On grasses in and out of the water lived *Amyclina corniculum* and *Calliostoma* sp?. The shells of the latter were covered with thin filaments of algae. Unfortunately, the tide turned and I had to abandon this wonderful mud flat. I was tired, filthy, and very happy.

The following is a list of the shells collected on the flat near Faro, Portugal.

Amiyclina corniculum Olivi
Anomia ephippium Linnaeus
Bittium reticulatum DaCosta
Calliostoma sp?
Calyptraea sinensis Linnaeus
Cardium edule Linnaeus
Cerithium vulgatum Bruguière
Columbella rustica (b) Linnaeus
Conus mediterraneus (b) Bruguière
Gryphaea angulata Lamarck
Halium sp? (b)
Lucina sp? (b)
Murex brandaris (b) Linnaeus
Murex erinaceus Linnaeus
Mytilus edulis Linnaeus
Nassarius reticulatus Linnaeus
Natica catena DaCosta
Neritula neritea Linnaeus
Epitonium communis Linnaeus
Solen marginatus (b) Pulteney
Tapes decussatus (b) Linnaeus
Tellina sp? (b)
Turitella communis Linnaeus
Venus gallina Linnaeus

REVIEW: THE SHELL MAKERS by Alan Solem, John Wiley & Sons, New York, 9+287 pages, profusely illustrated. $9.50.

This is an excellent popular introduction to mollusks and their shells by one of the leading malacologists of the world today, who is also the Curator of Mollusks in the Field Museum of Chicago. It is unique, as the title indicates, in that the approach is from the "maker", i.e. the inner soft parts of the shell rather than from the shell itself; it tells how and why the shell is constructed in a particular manner. The result is that instead of the static, frozen descriptions of shell morphology found in practically all popular shell books, we have here a dynamic, often excitingly written, account of why the shells -- and often the inner organs -- had to assume the form they do. For example, the author thus vividly relates the shapes of some bivalves to their function and environment: "The thin streamlined shells of *Isognomon*, the bulbous smooth *Mytilus*, abruptly angled *Arca*, and heavy shells of *Spondylus* all reflect different current conditions in their environment. The cluster of narrow *Isognomon* lives attached to projecting objects in shallow subtidal waters. The swirls of current continuously move them back and forth, their narrow width serving as an air foil in the currents. In contrast the tidal zone *Mytilus* can occur in dense colonies on rocks subject to the pounding of waves. Their more obese form plus very short and strong byssal attachment help minimize side to side movement by water currents. *Arca* lives in crevices of rocks and coral. Its broad top is well adapted to blunting the pressure of a wave.

The book is attractively produced, well printed, and richly illustrated, with several beautifully reproduced color plates. The dust jacket illustration consists of an eye-catching, colored conglomeration of "flopped over" shells of the Cuban Painted Snail, *Polymita picta* Born. There are about 45 startling shots of hugely enlarged scanning microscope pictures of radular teeth. This book is a decided -- and most welcome -- departure from the usual introductory shell book.

It is to be hoped that in the next edition the publisher will permit the author to supply *all* the bibliographical references, and thus make the work useful to student and expert as well as beginner. He should also insist on a few more illustrations: e.g. a complete radula *in situ* to demonstrate its function, and a diagram of the soft parts of a bivalve. There are also a few omissions from the otherwise very satisfactory glossary of terms.

All in all, this is one of the most innovative and most successful books recently published in its field. The careful reader will gain not only a new viewpoint toward the mollusks, but also a more satisfying idea of what nature in general is and a real insight in the manner in which evolution operates. Highly recommended.

Morris K. Jacobson

OBSERVATIONS ON POLYDONTES ACUTANGULA

Lee Nelson

In November, 1972, while on a one day collecting trip in the rain forest of Puerto Rico, my husband and I first encountered Polydontes acutangula Burrow. The observations that we made raised a few questions that we had neither the time nor the opportunity to explore further on that trip.

We had been collecting the large and abundant Pleurodontes carocolla Linnaeus when we found the first Polydontes acutangula. Since it was found in the same area and, at first glance appeared to be roughly the same size, we initially assumed it to be an albino or freak P. carocolla. As soon as it was disturbed, this snail produced a thick, yellow slime in such quantity that we quickly dropped it into the collecting bag without recognizing it as a different species. However, we soon began to find more and realized that it was not a freak or diseased P. carocolla.

Briefly, the observations that we made at that time were that this snail was proportionately so large that it could not fully retract into its shell, that it exuded the tenacious slime when disturbed, and that (with a single exception) it was found on only one type of plant. We have previously observed snails that seemed to prefer one plant to another, but never one that stayed so consistently on only one plant, with none on the ground or surrounding area. The area in which we found them (both the snail and the plant) was small, probably not more than an acre in size, and we found neither one anywhere else in the forest. The single exception was a snail which we found on a stone wall by the side of the road, quite a distance from where we found the others. And although we covered the area rather thoroughly, it was the only one we found there, giving rise to the thought that it may not have arrived there on its own, but may have been transported by some other means.

We decided that, since the animal could not fully retract, the yellow slime was in all probability its only natural defense. But the question of why we found it on only one plant continued to nag. Could it live only on this single plant? Discussion with a number of people far more knowledgeable than we did not adequately answer this question and brought responses of "Coincidence" or "Most animals have one food that they prefer", etc.

We were fortunate to be able to return to the rain forest in February 1973 and found that our previous observations still held true. Not a single specimen was found on anything but this one plant. Still plagued by the unanswered questions, we brought home 4 specimens (one died soon after arrival) to raise in a terrarium. Additionally, we brought along some leaves and flowers of the plant for identification. With help of Mr. Larry Pardue, plant identification specialist at the New York Botanical Garden, it was later identified as Sanchezia nobilis variegata, a plant native to Ecuador.

After establishing the 3 remaining snails in a terrarium, we offered many different vegetables and fruits, none of which they would touch. They did, however, survive for many months on a paste made of oatmeal, cornstarch and honey. They soon became accustomed to being handled

and seemed to enjoy being held under a faucet with gently running, tepid water, stretching far out of the shell and gyrating in a sort of water ballet. Never again in captivity did they exude the yellow slime, thus raising more questions. Had they become so accustomed to handling that they no longer felt threatened, or did they need something in that plant in order to produce this slime? Unfortunately, we were never able to supply this food again to see if they would resume the habit. Of course, their survival for months on a different diet answered the question of whether or not they could only live on this one plant. But we will probably never know why they seem never to move from this plant. Perhaps the plant itself is a repellent to their natural enemies. Needless to say, we became rather fond of those beautiful and trusting little creatures, and as they eventually died off, wished that we had not taken them from their normal environment.

SNAILS AND BEER

Morris K. Jacobson

Some time ago NYSC-Member Mr. W. Antonowitz, now living in Charlotte, North Carolina, sent me an article clipped from the German Periodical WELT AM SONNTAG entitled EIN BIER FÜR DIE GARTENSCHNECKEN, in which the author briefly described a method of controling harmful snails in a garden with the use of beer. He suggested that a shallow basin be set into the soil and some beer poured in. "The thirsty animals," the writer concludes, " can be quickly collected the next day."

Early in June I decided to repeat the experiment in Rockaway Beach, though the transplanted snails in my garden are not very harmful. I poured some beer into a saucer 5-1/2 inches in diameter and about one inch deep at the center, and let it stand overnight under some low-growing bushes. The next morning I hunted the saucer up. The results were astonishing.

No fewer than 65 specimens of *Triodopsis fosteri* F. C. Baker in all age levels and in various stages of intoxication, as well as 5 *Deroceras* slugs and about a dozen small *Discus rotundatus* Müller filled the saucer. The lower layer of snails seemed to be de~~e~~d but many a others, a few swaying along drunkenly with one eye tentacle jauntily half retracted and the other cockily waving about, quickly recovered from the binge.

On other occasions I noticed rather large congregations of snails on *Spisula* shells purposely left in their garden patch to provide calcium for their shells. But never such an accumulation as in my beer saucer, and never one that appeared so quickly.

NOTICE

There are still four copies of the 25th Anniversary of the New York Shell Club silver medals available, at $3.00 apiece. The Franklin Mint notifies us that others can be struck in quantities of not less than 20. At the end of the year, however, the dies will be destroyed and no further medals issued. Those interested in buying a medal, please write to: President Frank Nelson, 95-24 110 Street, Richmond Hill, New York 11419.

ANOTHER SINISTRAL LIGUUS -- In a recent number of NAUTILUS (Jan. 1974, vol. 88, p. 28) William Old and I published a short report on a sinistral (left-handed) specimen of the Banded Tree Snail -- Liguus virgineus (Linnaeus, 1767) -- from Hispaniola, now in the collection of the American Museum. In this article we pointed out how rare reports of specimens of sinistral Liguus are.

Now Mr. Oscar Alcalde-León of Miami, formerly of Havana, writes me that in his collection, now in the Academia de Ciencias de Cuba, he had a sinistral specimen of Liguus fasciatus crenatus (Swainson, 1821) collected in Camagüey Province, Cuba. Mr. Alcalde-León adds that it is the only one he ever saw and it is the only one in the entire collection of the Academia.

MKJ

FROM THE MINUTES OF THE JUNE MEETING -- VP Frank Nelson, reporting on a study of the cost of publishing the NOTES, cited a 20% increase in the cost of paper and 40% for envelopes since the last time the dues figure was raised. He said the study indicated the wisdom of raising dues by 50¢ per mailing address, to $4.50 for regular membership and $3.00 for corresponding. He made a motion that this be done, effective in September, and the motion was carried.

The Shell-of-the-Month was a bivalve given to Marian Hubbard by an acquaintance, a woman who had fished from a charter boat out of Fort Pierce, Fla. Feeling series of jerks on her line, she reeled it in to find a Lyropecten nodosus clinging to it. This reminded Nick Katsaras that on the day he collected the trash on the Asbury Park, N. J. beach which he had displayed at the May meeting, he had also found a Timex electric watch, humming faithfully in the sand. Karl Jacobson, in turn, was reminded of the day during the war when he found a box on the beach at Rockaway, NY. Remembering rumors that Nazi Germany was using such a method to bomb non-combatant beachcomers, he didn't open it until he had gotten an expert opinion. The box held human ashes, properly identified.

The annual election of officers was conducted by Nominations Chairman Mart Hulswit. This being a presidential-retirement year, he proposed VP Frank Nelson for president and five candidates for vice-president. Written balloting produced a tie between Veronica Johns and Sol Weiss, resolved when Sol conceded to Veronica.

Mart then reappeared as the main speaker of the day. With the aid of slides, he described a family vacation trip, the previous spring, to the Yucatan Peninsula. He gratified a long-time desire by visiting a number of Mayan ruins, and also did what collecting he could by snorkeling at Cozumel. He was hampered, however, by winds, waves and strong currents. One of his photos showed the capture of a large hammerhead shark at a point where he had been swimming only a few minutes earlier.

Milton Werner,
Rec. Sec.

The WESTCHESTER WEEKEND of August 9 last ran an illustrated article about an exhibition arranged by NYSC-Member Ella Mazel in the Larchmont Public Library. This shell exhibition is unique in that in addition to shells, Mrs. Mazel also displayed many rare shell books from her collection. These are old books published in 1553, 1684, 1733, 1744, etc., etc. The exhibition will be on display through September. The library is located on Larchmont Avenue just off the Boston Post Road (Route 1) opposite the fire house. Mrs. Mazel sent me a xerox copy of the title pages of the books on display. This will be shown at the September meeting.

JOHN QUINCY BURCH (1894-1974)

The Editor is in receipt of the very sad news that John Q. Burch passed away on August 7 in his home at Seal Beach, California. He was one of the leading collectors and students of his time and, as founder and long-time editor of the MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA, he made real contributions to shell collecting as a hobby as well as to the scientific field of malacology. The ranges of all the molluscan species of the West Coast, published in the MINUTES, is one of the most complete compilations for any region ever published and is still widely consulted even today. John Q. was also a fairminded and friendly dealer in shells and shell books and to many older American collectors he was their first contact with the exciting world of shell sales. The writer remembers John Q. as a bluff, hearty, kind, and understanding gentleman who radiated cheerfulness wherever he appeared. His earlier address in Redondo Beach, California, became, at least to me, a distant shell paradise and my first visit to him at his home remains one of the outstanding shell adventures of my life. He will be greatly missed by those who knew him personally or only by correspondence. MKJ

WHAT'S IN A NAME?

Felipe Poey y Aloy (1799-1891), the great Cuban philosopher, poet, lawyer, and naturalist, in his great work MEMORIAS SOBRE LA HISTORIA NATURAL DE LA ISLA DE CUBA (1852, vol. 1, p. 102) wrote the description of two species of new Cyclostoma (now called Chondropoma), a genus which is amazingly developed in Cuba. He called one of them verecundum (Latin for bashful, shy, modest) and the other honestum (Latin for proper, chaste, virtuous), because, as he explained, although both species had exposed umbilicuses (umbilici?) when they were young, they covered them modestly as they grew older. But when Poey later found a third species which never bothered to cover its umbilicus even when mature, but instead insolently exposed it for everybody to see, in indignation he named it procax (Latin for shameless, impudent, wanton). I can only add that when I first saw the umbilicus of procax, I could not see how it could possibly be accused of inducing salacious thoughts in anyone. But maybe Poey knew more than I.

MKJ

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NEW YORK SHELL CLUB NOTES No. 205 October 1974 Page 1

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ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, NOVEMBER 10TH, 1974, at 2:00 P.M.

PROGRAM: SHELLING IN BERMUDA, OR HOW TO CHITON YOUR INTEREST IN SHELLS
by Ken Sanger

A TRIP TO BORNEO
by Veronica Parker Johns

SHELL-OF-THE-MONTH

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AUCTION NOTICE. A second auction of shells from the collection of the late George Jacobs will be held on October 27 from 1 to 6 PM at the Broadway Dance Studio. Interested persons may contact Mrs. G. Jacobs, 11 Stetner Street, Spring Valley, New York 10977.

OF MAN AND MOLLUSK. -- One day, as Jim Dryden approached the old wooden pier at Key West, Florida, he noticed three boys in the water throwing around a sea hare -- also known as the "ink-fish". (Aplysia -- Ed.) The tormented mollusc was squirting the purple fluid it emits for its protection. Mr. Dryden dove into the water, placed the sea hare close to his chest and swam on his back about 25 feet to the pier. During the swim, the animal stopped squirting the fluid and stayed on his chest. That was the beginning of a rather unique friendship. During the next three months, when Jim Dryden went for his daily swim, the sea hare would swim in from the distance, ready for its ride on his chest. Then, for some reason, it stopped coming to meet him ......

I.O.F. SEA SECRETS, Vol. 17, No. 1, Jan.-Feb. 1973

NOTE ON THE WORDS CONCH, COCKLE, CONCHOLOGY. -- The word conch derives from the Greek kogche, Latin concha. But there is much more to the story than that. The word koça in Sanskrit refers to any covering more or less solid like an eggshell, a cocoon, a husk, a box, a helmet, a sheath, a case or, of course, a mollusk shell. This became kokkos in Greek, cohlea in Latin, kuka in Illyrian, kukla in Russian, cocwy in Welsh, cochal and coichme in Erse. Even the Chinese use the word koi-ka-la for certain shells and from all this we derived our own cockle, conch, and conchology. This word koça also gave rise to scaragol or caragolo in Catalan, caracol in Spanish, and escargot in French. The Arabian word karakara meaning to turn, is probably related, because the helicoid or round shape of a shell suggests the idea of a return.

mkj

HAITI, PEARL OF THE ANTILLES

Lee Nelson

Recently my husband and I, together with twelve other people, went to Haiti for a week of shelling and relaxation. With all that I had heard and read of Haiti, I must admit to some feeling of relief that we were to be part of a group. After all, in a land with such stringent governmental regulations, oppression, Voodoo, strange culture and foreign language, who could tell what difficulty might arise? Haiti has been called many things by many people -- mysterious, unknown, primitive, backward -- and the people dirty, lazy, superstitious and ignorant. I don't know who it was that first gave it the name "Pearl of the Antilles" and if it came out of a knowledge and love of the country, or if it referred to the great wealth being wrung out of Haiti, but today it seems very appropriate and descriptive.

Unfortunately, the shelling was not as spectacular as we had all hoped, but Haiti is a large country, and we may not have found the best areas. Perhaps we did not pick the best time of year. But largely, I think, we tend to overly anticipate the rare and unusual.

Except for one day of sight-seeing, we spent the week at the Ibo Beach Hotel on Cacique Island. To reach Cacique, one must ride for about 30 minutes roughly northwest from Port-au-Prince, around the Gulf of Gonave, and then take a 5 to 10 minute ride on a launch that runs on a half hourly schedule to and from the island. Cacique is a private island lying about a half mile or less off shore and largely surrounded by a coral reef. It was once an Arawak burial ground, and bits of pottery, figurines and shell mounds can still be found on the undeveloped half of the island. Except for the area occupied by the hotel, it is arid and overgrown with brush and cactus, with mangrove swamps along the shore. Small birds, lizards and few peacocks were the only wildlife to be seen, with surprisingly few insects of any kind. Here we found five species of land snails, most of them estivating on the cacti. Although I haven't fully identified these snails yet, 2 are Macroceramus, 2 Pomatrasidae, and one a Cepolis.

Most of our marine shelling was done around the reef on the gulf side, and on the eastern end into the channel between the island and the mainland of Haiti. The water here was shallow and clear, with nothing more awesome than occasional fire coral and quite a number of sea urchins. The following is a list of most of the species that we collected in this area:

Acanthopleura granulata Gmelin
Acmaea antillarium Sowerby
Asaphis deflorata Linnaeus
Batillaria minima Gmelin
Cantharis tinctus Conrad
Cassis flammea Linnaeus
Cerithium algicola C. B. Adams
Cerithium litteratum Born
Codakia orbicularis Linnaeus
Columbella mercatoria Linnaeus
Conus regius Gmelin
Coralliophila caribaea Abbott
Littorina ziczac Gmelin
Mitra nodulosa Gmelin
Murex pomum Gmelin
Nerita tessellata Gmelin
Nerita versicolor Gmelin
Ostrea frons Linnaeus
Pinctada radiata Leach
Planaxis nucleus Bruguière
Pteria colymbos Röding
Purpura patula Linnaeus
Strombus costatus Gmelin
Strombus gigus Linnaeus

Cyphoma gibbosum Linnaeus
Drupa nodulosa C. B. Adams
Fissurella barbadensis Linnaeus
Isognomon alata Gmelin
Isognomon radiatus Anton
Latirus mcgintyi Pilsbry
Leucozonia Nassa Gmelin
Littorina angulifera Lamarck
Strombus pugilis Linnaeus
Strombus raninus Gmelin
Tectarius muricatus Linnaeus
Tellina fausta Pulteney
Thais deltoidea Lamarck
Thais haemostoma floridana Conrad
Thais rustica Lamarck
Xenophora conchyliophora Born

One day we chartered a boat to take us to Pelican Reef and Sand Cay, some 5 miles out in the Gulf. Pelican Reef is submerged coral lying in shallow water on a white sand bottom. We added nothing different to the collecting bag except *Coralliophila abbreviata* Lamarck. But it seemed as if this was home base for all the *Cyphoma gibbosum* in the Caribbean, and the spectacular display of corals, colorful tropical fish, gorgonias, and the amazing clarity of the water all more than made up for the lack of anything unusual in the way of shells. Our stop near Sand Cay, a tiny, rocky, barren island, added only *Pinna carnea* Gmelin to our list of specimens. While the coral reef here was beautiful, it was not as large or spectacular as Pelican Reef, and the water was slightly less clear.

It was a memorable day, but we were all happy to get back to the hotel and relax with lemonade and rum punch. The Ibo Beach is a very attractive, informal and restful hotel, with about 70 individual cottages scattered under the trees on the white sand. It has 3 swimming pools, a tennis court, shuffleboard, ping pong and facilities for snorkling, diving and water skiing. Parts of it are still being improved and enlarged, and one day it will no doubt cover most of the island.

Being a non-marine enthusiast, I had hoped to get into the rural areas in the mountains for some land shelling. The entire island of Hispaniola is reportedly a very productive area, surpassed in the Caribbean perhaps only by Cuba and Jamaica in the number and variety of land snails. But except for one *Helix aspersa* given to me by a young man in the mountains, the only land snails that I was able to collect were on Cacique. With only one day on the mainland to do our sight-seeing, there was simply no time for land shelling, although we did see some very enticing gullies and ravines on our ride through the mountains.

It would probably take about a month to cover a country the size of Haiti, even superficially, and in one day we saw very little. Our bus took us through the elite suburb of Petionville, up into the mountains south of Port-au-Prince and back into town for a quick tour of the capitol. This whirlwind trip gave us only a kaleidoscopic view of a very small part of the country. It happened to be market day, and everywhere we saw throngs of peasants walking along the roads to and from market with loads of assorted produce and chickens balanced on their heads. At a small country town we were beset by hordes of children, all wanting (for a price) to act as our guides through the teeming marketplace and to have their pictures taken. Another stop, at Le Perchoir, gave us a breath-taking view of Port-au-Prince, the Gulf, the Cul-de-Sac Plain and high, rugged mountains. It was surprising, after our stop at the Barbancourt rum factory, that any of us had the ability or the inclination to go on. Here, in a beautiful old castle, we sampled 17 different flavors of rum liqueur. But re-armed

(or numbed), we had the strength to make several stops along the road for a late lunch and some shopping on our way into town. Port-au-Prince appeared to be a colorful and interesting place, if much like any other fairly large city. Unfortunately, it was then quite late and the city was closing up for the day. But the traffic, in typical French fashion, was an experience in itself. It is said, and I think correctly, that the Haitian driver relies for more on the horn than on the brakes.

Although short, a week in Haiti was enough to dispel my pre-conceived ideas and to whet my appetite for more. Haiti has been much maligned and, from what we saw, suffering from a very undeserved reputation. For anyone who might otherwise consider a shelling trip to Haiti, some idea of what to expect could be just as useful as knowing where to find the shells. At no time did we feel that we were being watched or restricted, nor were we subjected to any stricter regulations than one normally expects when travelling in the Caribbean. Starting with the customs officials, who were almost apologetic in helping to put things back in order, we found the people everywhere to be pleasant and good-natured. The great disparity between what I expected and what I found has prompted me to do a lot of reading on Haiti in an effort to understand this country. From what I have learned, the average person, outside the capitol at least, is law-abiding, almost totally non-political, and consequently has little contact with the authorities. If the people feel oppressed, they certainly don't show it.

A vast number of Haitians are uneducated, but not unintelligent. And Haiti, like every country, undoubtedly has its share of the dirty and lazy. But running water and sanitary facilities are virtually non-existent in the rural areas. You can't help admiring the cleanliness of these people when you consider that in some areas, water must be carried for as much as 5 miles, or when you see them bathing, doing laundry and washing cooking utensils all in a small stream no more than 2 feet wide. For the most part, the people seem active and hard-working, with nearly everyone, including the children, busy at something. Who can know whether those few seen lounging around are ravaged by malaria or tuberculosis (both unfortunately fairly prevalent) or have just walked 20 or 30 miles to market with a heavy load? There are many complex reasons, some of them going back to its early history, for the conditions that exist in Haiti today. It is an appallingly poor country with many problems, and it will no doubt be many years before results can be seen from the vast programs under way in health, education, sanitation, irrigation, etc.

One of the most publicized and least understood aspects of Haitian culture is the practice of Voodoo. Voodoo is quite simply a religion. It is a highly complex religion with many different sects and one about which even the "experts" disagree. But it is no more mysterious, to those who practice and understand it, than any other religion, no more superstitious than is the elimination #13 from room numbers, rows of seats, and floors in a building. Secret? It is highly unlikely that the average tourist will ever come in contact with an authentic Voodoo rite. But if he should (expecially in Port-au-Prince where strangers are more common), he can probably observe, if properly respectful, without being stopped or challenged. The same can hardly be said for a certain large and prestigious organization in this country. Of course, there are numerous performances staged for the tourist

both in Voodoo and "Black Magic", which are quite separate and distinct, the serious devotee of Voodoo having nothing to do with the latter. But poverty, the tourist dollar and efforts by both the government and the Catholic Church to suppress Voodoo have all combined to tempt the less scrupulous practitioners into making a more lucrative living.

No one should travel in Haiti, or anywhere, without some idea of the dangers and diseases he might encounter. Happily, Haiti has few real dangers, except possibly washed out or impassable roads in some rugged and remote areas. There are scorions and centipedes, but no venomous snakes. There are, however, several diseases against which one cannot be immunized. Dysentary can be quite severe and prostrating and care should be taken to drink only bottled water, which is used by all the better restaurants and hotels. Yaws, hookworm and tuberculosis are all fairly common, but with ordinary precaution, no danger to the tourist.But malaria is becoming an increasing problem, and one would do well if planning on going into the rural areas, expecially in the north, to take anti-malarial drugs. It is recommended that these be taken not only while there, but for 3 weeks before and 3 weeks after possible exposure.

Another situation in which the tourist might have difficulty is in taking pictures. The smaller children, expecting money, are happy to oblige, but older children and adults do not want theirs taken. It takes only a recognition of their extreme pverty to be sympathetic toward their feelings about this.

U. S. currency is readily accepted, but go equipped with plenty of change and small bills. Not only are you constantly having to hand out change for small favors, but after talking a poor peasant down from $10 to $3, you can hardly expect him to change a $20 bill. And among the street vendors, you must bargain or be vastly overcharged.

The language barrier can be as great or as small as you make it. Although French is the official language, the peasants speak Creole almost exclusively. However, most understand some French, and the amount of English seems to depend in large part on the degree of contact they have with tourists. They greatly appreciate any effort to speak to them in French, which is about as close as most tourists can come to Creole. So if you know any French at all, don't hesitate to use it. The attempt, however poor, will be met with a smile and friendly cooperation.

Haitians are justly proud of their beautiful country. This second-oldest independent country in the western hemisphere has a way of life that is colorful and interesting, and perhaps unique in the world, and people that are as cheerful and friendly as any you will meet.

In the Tupi-Guaraní language, spoken by the Indians of Paraguay, the word "paraguay" means "parrot river", and "uruguay" means "snail river".

Mario Pei, THE STORY OF LANGUAGE

(contributed by Mr. Milton Werner)

AN EXTINCT FOSSIL SHELL SPECIES IN THE NEW YORK CITY AREA

Morris K. Jacobson

Some years ago I found a specimen of Colus stonei (Pilsbry 1893) on the beach in Rockaway. This is one of the few extinct fossil mollusk species to be found in our area. The shell, like most fossil shells, is not particularly attractive, but beach specimens are so rare here that I was very happy with my find. It is now in the collection of the American Museum of Natural History.

In 1972, a paper by A. H. Clarke, D. R. Grant, and E. Macpherson (Canadian Journal of Earth Sciences, vol. 9, pp.1030 - 1038) was published which presented a great deal more information on this species. In the first place, the authors say that the species should be called Atractodon stonei because "the unusual spiral sculpturing, the extended and reflexed siphonal canal, and the relative proportions" put it close to the Pliocene European species Atractodon elegans Charlesworth 1837, the type-species of the genus Atractodon. Besides Colus stonei, the species has also been called Chrysodomus stonei and Neptunea stonei.

Specimens of A. stonei have been found on beaches from New York to Cape Hatteras, and have been excavated from the Sangamon Formation in Canada (laid down some 38,000 years ago), on Gardiners Island in Long Island Sound, (but see below), in borings at 1900 fathoms in the Hudson Canyon off Delaware, in Sankaty Head, Nantucket, and in well borings in Westhampton, Long Island. The specimens are found associated with recent species like Littorina obtusata Linnaeus, Polinices duplicatus Say, Mya arenaria Linnaeus, Macoma balthica Linnaeus, and Mytilus edulis Linnaeus. The authors maintain that A. stonei is not older than the Pleistocene and is not, as some authors wrote, Pliocene or Miocene. Carbon datings seem to support the age of about 35,000 years.

Gustavson (Journal of Paleontology, vol. 46, pp. 447-459, 1972), who lists all the shells found in the Sangamon beds on Gardiner's Island, reports the presence of 25 molluscan species, but not A. stonei. This could be due to the fact that these beds were laid down in shallow brackish water in which a marine species like stonei would not feel at home.

Members of the N. Y. Shell Club should keep their eyes open for specimens of A. stonei. It is described as follows in Jacobson & Emerson, SHELLS FROM CAPE COD TO CAPE MAY, 1971, p. 62: "The shell differs from the others of its genus (Colus stimpsoni Mörch and C. islandica Gmelin) in having a dumpier shape, deep sutures, and prominent spiral lines." In addition, the siphonal is longer and strongly bent to the right. It is said to be found frequently after storms on Virginia beaches.

"The costumes of participants in the annual Masquerade in Effingen, Switzerland, are often completely covered with snail shells."

(Ripley's Believe it or Not, King's Feature Syndicate, Inc. 1971)

FROM THE MINUTES OF THE SEPTEMBER MEETING --

Our chief speaker was Mrs. Susan Hoffman, who wore, for the first few minutes after her arrival, a Smokey Bear hat. The headpiece served to convey the unexpected information that Mrs. Hoffman is a U. S. Parks Ranger. For the last 14 months she has been assigned to the Gateway National Recreation area, and this multiple facility, still in its early stages of preparation, was her subject. It will occupy several locations around the triangular area of water surrounded by Sandy Hook, N. J., and Staten Island and south Brooklyn, N. Y., and will offer beaches, picnic and camping areas, nature and bike trails, fishing, and wildlife preserves. With the aid of slides, Ranger Hoffman described the Service's efforts, to date, in obtaining the desired land, doing clean-up where necessary, and planning for future utilization. Mart Hulswit recalled that the Club had done its bit toward bringing Gateway into being through letters to legislators. The letters had advocated the inclusion of Floyd Bennett airfield in Gateway, and this detail is part of the reality.

Guest Joseph Fernicola, of the New York Herpetological Society, was present to acquaint Club members of efforts in progress to assure legislation that would create a State park in the Clay Pit Pond area of Staten Island. As he had on a previous appearance, he provided a supply of information sheets for the guidance of members who write to Borough, City and State executives.

Bob Janowsky showed slides he had taken while he and Dorothy were attending the recent meetings of the Conchologists of America, in Seattle, Wash., and the Western Society of Malacologists, in Pomona, Cal. He described high points of the trip and the meetings, and identified the people seen in his pictures.

Milton Werner
Recording Secretary

AMERICAN MALACOLOGISTS 1975 SUPPLEMENT

The managing editorship and main office of the national register of amateur and professional malacologists have now been entirely transferred to Dr. R. Tucker Abbott, P. O. Box 4208, Greenville, Delaware, 19807. All correspondence, listings, and orders should be sent to the new address.

A supplement for 1975 is now being prepared and will be ready for mailing in early spring. The cost will be only $1.00, and it will contain address changes and a listing of the names, addresses and interests of new registrants. A special discount of 20% is now offered on the purchase of the 1974 hardbound, 494-page volume to those who send in for a free application form. The new reduced price is $10.00, plus 50 cents for postage and handling.

American Malacologists has proved to be a very useful and interesting book for all those who correspond with other collectors or those who do research on the history of malacology.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, DECEMBER 8TH, 1974, at 2:00 P.M.

PROGRAM: FOSSIL MOLLUSKS --

COLLECTING LOCALES - Sid Horenstein - Department Fossil Invertebrates AMNH

FOSSIL FAMILIES - Various N.Y.S.C. Members

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DO SHELLERS LIVE LONG AND STAY YOUNG?

In a fascinating new book, edited by malacologist R. Tucker Abbott, a study of 1,000 living and 500 deceased shell workers shows that the mean life span of early American malacologists was 81 years! Five percent lived into their 90's! If you're listed, either as a professional or amateur conchologist, you are among 7 in every million Americans. 14 percent of you conchologists are college professors, 10 percent are homemakers and 7.3 percent are physicians.

Did you know that President Thomas Jefferson, an amateur paleoconchologist, had a scallop named in his honor? That the famous Christmas plant, poinsettia, was named after a shell collector, Joel Poinsett, who was Secretary of War in 1837? That Daniel Barnes who named Cypraea eburnea and many unios was a baptist preacher and was killed at 43 by falling from a New York stagecoach?

NOTICE: Dorothy Raeihle of the Editorial Staff, has moved. Her new address is --

211 Milligan Road, West Babylon, New York 11704

INCIDENTALLY, the Editorial Staff, would very much appreciate an avalanche of articles from the members. We know you're out there, and we know you have a lot of interesting material to submit. Please share it with us?

DISCORD IN PARADISE III

Morris K. Jacobson

The life of Constantine Samuel Rafinesque (1783-1840), also called Schmaltz-Rafinesque, was as full of quarrels and discord as perhaps that of any man of science of his century. This was especially true in the United States where few of his contemporary workers in the field of conchology had much good to say about him. This enigmatic and somewhat pathetic figure produced a great deal of work in a bewildering number of unrelated fields, but much of it is a queer mixture of outright charlantry and solid achievement. His work in the rich field of North American naiads (fresh water mussels) produced an unusually large amount of bitter debate which, much reduced in force and volume, continues even today.

Most American conchologists of his time attacked him bitterly. Isaac Lea referred to him as "this unfortunate naturalist" whose work caused him (Lea) to give up "in despair and lose his labor." He quoted other workers to prove that Rafinesque had been "in a diseased state of mind for thirteen years" and "was in the habit of naming and describing species which he never saw." In 1869 James Lewis used him as an eponym for splitters. Noting the extreme variations in colonies of the Tadpole Snail, Physa, he wrote: "A Rafinesque would make hundreds of species by going over the limited area I have studied." Harold B. Hannibal, who himself ended in insanity, wrote about Rafinesque's new genera: "The English language is not forceful enough to judge these crimes in the name of science." In short, as E. D. Merrill wrote: "About every disparaging adjective in the English language has been applied to him by this or that author."

Rafinesque struck back, a little tearfully: "Since 1820," he wrote, "several American conchologists have attempted to notice, describe, or figure these shells; Barnes in 1823, Lea, Say, and Eton later still. They had a fine field before them in elucidating them by good figures, and describing the new kinds, but led astray by various motives, they have neglected to verify or properly notice my previous labors, although they were known to them! (original emphasis). Mr. (Thomas) Say is, above all, inexcusable. I had respectfully noticed, in 1820, his previous labors; but he has never mentioned mine, and knows so little of the animal of these shells, as to have mistaken their mouths for their tails, and their anterior for their posterior part of the shells! ... Others pretend that my monograph is too intricate; it is the subject which is such.... The works wherein their (i. e. Lea et al.) erroneous labors are found cost above $100! Mine only 50 cents. This has put it out of my power, as yet, to verify all their mistaken and synonymous names."

Rafinesque was not without his supporters, most of them, unfortunately, appearing after his death. L. Frierson in 1927, took up the cudgels to defend the harassed naturalist, especially against the attacks of Lea. Lea, wrote Frierson, had an uncritical mind and used propaganda against Rafinesque to save his own names. He accused Lea of professing an inability see a perfectly obvious description of Rafinesque's, and then renaming these shells. Lea, he said, wrote in complete disregard of Rafinesque's earlier works. Eric Knight Jordan offered a less

strident and more balanced defense. "I may say," he wrote, "that (Rafinesque's work) as a whole is bad enough, and bad in a peculiarly original and exasperating way, but it is much better than some of his critics have considered it." He offered one reason for the intense opposition which Rafinesque faced: "A certain amount of conservative odium always attaches to a writer who attempts to form natural genera out of time-honored artificial combinations." Thus, where Rafinesque found only the genus *Unio* in use, he broke it up into such genera as *Elliptio*, *Quadrula*, *Amblema*, *Pleurobema*, *Strophitur* etc. all in use today.

R. C. Call was another who spoke up strongly in the defense of Rafinesque. Referring to the Catalog of the Unios adopted by the Western Academy of Natural Science in 1849, he wrote that "it had its origins in a determined attempt to recognize none of Rafinesque's species." He pointed out that Rafinesque's descriptions were so accurate that the authors of the catalog (S. P. Hildreth, J. R. Kirtland, H. A. Ward, and R. Buchanan) recognized the species but, overlooking their priority in time, placed them as "synonyms under names which they and their friends attempted to establish." Mr Call went on to paint a dismal picture of the age. "Jealousies of the most pronounced character entered into the matter, and a general wrangle ensued which involved nearly all the conchologists of the country." It should be noted that these jealousies involved others besides Rafinesque; many workers did not like Lea. Thus some of these men "forced recognition" of Rafinasque's species not because they felt them to be right, but "in the hope that Mr. Lea's names would fall into synonymy." This is how petty some students could be in the past! Call ascribed much of the later confusion in the nomenclature of the naiads to these vigorous and childish antagonisms.

Howver, this "very unpleasant episode in American malacology", as Call described it, came to an end, and slowly justice has been done to a large extent to the better portions of the conchological work done by Rafinesque. Even today Rafinesque has his vigorous supporters, and only very recently was the Simpson name *Carunculina* replaced by *Taxolasma* Rafinesque for a genus of lovely little naiads.

Nevertheless Rafinesque had his quirks. He described and named the various kinds of thunderstorms as though they were living organisms. Once he proved that a species of cephalopod which he had described and named was really an octopus and not a squid by reporting of the single holotype of the species "I did eat this *Ocythoe* which afforded a meal for many, and it was as good as usual with the octopus." But let's not laugh. Didn't Pilsbry himself once inadvertently swallow a holotype which he had placed on his tongue for safe keeping?

"...costumed after the Indian fashion; that is to say, with white pads round their temples, and small drawers of byssus which, with their transverse folds, looked like two valves of a shell applied to their hips."

G. Flaubert, in Salammbô.

SNORKEL AND SCUBA ACCOUNTS IN BRIEF

Sandra Hunter

I thought that a brief description of some of the places I have scuba dived and/or snorkeled might be of some interest to Club members who, like me, like to track them down where they live. In the accounts below, the place is given first, then the date, the type of diving, conditions and remarks.

Bahamas, Freeport, near Lucayan Beach; June 1966, snorkel and scuba, conditions excellent, water clear, warm; colorful reef; grass flats, take boat to reef.

Bahamas, Paradise Island, Holiday Inn; November 1971; snorkel; cloudy water, rough; dull.

Barbados at Barbados Hilton; August 1969; snorkel; clear, oil slick one day; limited life.

Bequia, Admiralty Bay, August 1969; snorkel; clear; limited life, nice rocks near bay mouth.

Bermuda near Horseshoe Bay; June 1968, May 1972; snorkel; cloudy, sandy bottom, little life.

Bermuda off Sonesta Beach Hotel; June 1968, May 1972; scuba; conditions clear, water cool; take boat to beautiful reef.

Bermuda, Shelly Bay; May 1972; snorkel; clear sandy bottom, little life, rocks at mouth of bay have gorgonians with very sharp coon oysters.

Bermuda, Gilbert's Island; June 1968; scuba; limited visibility; not much to see anyway.

Florida, Key Largo, Pickles and Molasses Reefs; August 1973; snorkel and scuba; clear, heavy current; many gorgonians, few shells, pretty combo of reefs and grass flats, offshore need boat and guide.

Florida, Key West, reef; December 1966; snorkel; rough, fair visibility; reef way offshore, need boat, probably good when calm.

Florida, Key West, Navy Base Beach; September 1967; snorkel; clear, calm; grass, lots of fish and a moray (don't put your hand under strange rocks).

Florida, Marathon; December 1966; snorkel; cloudy, rough, cold; didn't see a thing.

Florida, Sanibel, front of Gallery Motel; August 1973; snorkel; very cloudy, hit bottom before I saw it; consider water this cloudy as unsafe.

Florida, Tavérnier, Harry Harris State Park; August 1973; snorkel; fairly clear, better in pool than outside; many cassiopea jellyfish, pretty.

Florida, Vero Beach and Amelia Island; August 1973; surf too rough to go in.

Guadeloupe, Ajouba Beach at Auberge de la Vielle Tour; snorkel; clear, gets deep fast; good for Cyphoma.

Guadeloupe, Anse Bertrand; May 1969; snorkel; conditions excellent, clear, strong long-shore current, protected by reef; elkhorn coral, Conus, fish.

Guadeloupe, Grande Anse Beach; May 1969; snorkel; clear, heavy swell, yellow sand, clear and barren.

Guadeloupe, Pointe des Chateaux; May 1969; far too rough to go in.

Nevis, Long Haul Bay, Beachlands; June 1967; snorkel; fair visibility, often rough; dead coral, almost no life.

Nevis, Pinney's Beach; June 1970; snorkel; clear; dull, barren sand.

Puerto Rico, Dorado Beach Hotel; June 1967; snorkel; clear inside breakwater; has been dredged, everything covered with brown glop.

Puerto Rico, Luquillo Beach; snorkel; clear; good for Oliva.

St. Vincent, off Young Island Hotel; August 1969; snorkel; excellent; coral, fish, tube worms about 5 in. offshore in shallows - straight out and deeper, loggerhead sponges and live pens, to left of hotel elkhorn coral.

FROM THE MINUTES OF THE OCTOBER MEETING

The Australian shell club badges displayed by Frank Abbottsmith during his presentation here aroused considerable interest among members. President Frank Nelson had written to one manufacturer of such enameled metal badges to determine the feasibility of having them produced in comparatively small quantity, and he referred to the answering letter, which was favorable. He asked for a show of hands to indicate interest in a Club badge, getting a strong response. Design suggestions will be considered, and price quotations obtained.

The first presentation, by John Lyons, was a slide-illustrated description of a vacation trip this summer which took Chris and himself to Iceland and the Faroes Islands. Although this was not a shelling trip, they did collect four species: Patella vulgata, Nucella lapillus, Littorina obtusata, and Gibbula cineraria. Besides photos of the shells and the collecting areas, John showed scenic pictures, and two series he had purchased, one following the progress of the four-year volcanic pyrotechnics that formed Surtsey Island, and the other the volcanic eruption on Heimaey Island and the resultant condition of the town, part of which was buried in ash.

The second presentation, by Frank Nelson, was a description, illustrated with slides, of a land-shelling trip in and around the Luquillo Rain Forest, in eastern Puerto Rico. Lee and Rrank Nelson, Norma and Harold Feinberg, and Milton Werner spent the Washington's Birthday week-end there in 1973, bringing back at least 15 species. This is a region of magnificent scenery and a wide variety of molluscan habitats, as recorded in the photographs.

Milton Werner

COLLECTING IN SHELTER ISLAND

Monique Caubere

Towards the end of last June the New York Shell Club planned to hold its field trip on Shelter Island. I was looking forward to going to the island since the two previous trips had been at Orient Point. Nostalgia played a part in my enthusiasm because, during college I had spent an exciting weekend there with a roommate who lived in a huge, rambling house right off Nichol's Point.

When Saturday dawned, it was a grey, dreary day, fog wrapped the Hudson, and the bell buoy tolled, warning ships to beware of the Tappanzee Bridge. The weather dampened my spirits, but I managed to get myself together, pack supplies and a picnic lunch. A friend was coming along, not a shell collector but as enthusiastic as I was about going to the island. By the time we gathered all our gear and packed it into the car, it was quite late. There was no hope of making the low tide since it's a good two hour drive to Shelter island from Rockland County. During my last visit I remembered finding many shells when the tide was in, so I wasn't worried.

Just as soon as we reached Long Island the clouds lifted and the sun came out. We drove down the North Shore to Greenport, took the ferry and crossed over to the island. I had never seen this side before and was fascinated by the quaint village and the lovely landscape. Thanks to excellent directions we had no trouble finding the collecting spot. We didn't wish to disturb anyone, so we parked the car and looked for a likely spot to begin shelling. I was hoping to get suggestions from other club members and started searching for them. None were in sight at either end of the beach. Two elderly ladies mentioned that there had been a few people in the morning, but that they had gotten discouraged by the bad weather.

The water was quite calm and clear. Many colonies of Littorina and Urosalpinx could be seen clinging to the bright seaweed.
The beach itself was strewed with thousands of shells, mostly single valves of Argopecten irradians. There was also a vast array of colorful, smooth rocks. I was mostly interested in obtaining a color series of the pectens since I knew some could be bright orange or elaborately patterned. There were no matched valves near us so we wandered down the beach and set up the picnic behind some large boulders. It was a beautiful, private spot.

My friend waded in the water and picked up several specimens of pecten with closed valves. Since he didn't have a bucket, he held them in his hands. All at once one of the scallops began opening and shutting its valves. I explained how the shell was still alive and that this was their method of locomotion in water. We then noticed the row of opalescent blue eyes. Neither one of us had ever seen a live scallop before, so it was quite a treat. We waded out a bit further to a depth of about six inches and found hundreds of live specimens resting on the bottom. I didn't know whether this was their usual habitat or if they had been washed there. We gathered many, surely enough to make a fine supper, but after a while, I felt guilty about it and re leased them We then walked further down the beach, perhaps half a

mile further. Here we found drifts of pecten shells. The mounds were knee-deep in some places. It was in this area that I began to find the orange specimens. Most were very fresh and had both valves intact. This was a far more rewarding site than Orient Point across the bay, not only for the shelling, but for the privacy and the scenery as well.

All in all it was a marvelous day. What a pity not more people were there to enjoy it. Later I found out that the other members of the Club, discouraged by the bad weather, had decided to visit the home of member Sol Weiss in Roslyn where they spent a pleasant few hours enjoying his hospitality and viewing his collection.

E. FLYNN FORD

It is with sadness that we annouce the passing of Mr. E. Flynn Ford in October. Mr. Ford was born in Parkersburg, West Virginia, on December 12, 1909. He began collecting shells in the mid 1950s and frequently travelled from St. Louis to New York to visit collectors and dealers, George Jacobs in particular. He was a generous donor to the reference collection of shells at the American Museum of Natural History.

Flynn and his wife Mary made annual pilgrimages to New York to attend the Katsaras auctions. Or to quote Nick Katsaras, "No one travelled more miles to come to the auction than the Fords. That meant about six trips from St. Louis to New York and 6 or 7 trips from their home in Fort Lauderdale to New York."

Mr. Ford also loved to attend the Shell Shows held in Florida each winter. He was a prominent exhibitor at many of the shows. Thus, in addition to collecting rare and choice shells, he also collected ribbons and trophies from the shell shows.

When asked what he considered the rarest shell in his collection, he replied, "Perhaps our perfect 15 inch Cottonia nodiplicata, or our Cypraea rosselli." Personally, I preferred his superb specimen of the pleurotomarian, Entemnotrochus rumphii Schepman (which W. K. Emerson chose as "Shell-of-th-Show" at Broward County Shell Show in 1970 and that I picked for "Shell-of-the-Show" at the Naples Shell Fair the same year.)

William Old

ARTICLE OF THE MONTH

Drs. A. Marbach and M. Tsurnamal discuss molluscan acid secretion in an article entitled "On the biology of Berthellina citrina, (the curious gastropod with a bivalve shell) and its defensive acid secretion" in Marine Biology 21:331-339 (1973). The specimens were collected in the Gulf of Elat (Red Sea) on sandy substrate overlaid with stones. They are nocturnal, feed on various sponges. They release an acid secretion (pH 1) with sulphate and chlorine ions which protects them from all laboratory-tested sea-anemones, fishes and crustaceans.

Henry Russell

NYSC NOTES NUMBER 207 DECEMBER 1974

NEW YORK SHELL CLUB INC.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, JANUARY 12th, 1975, at 2:00 P.M.

PROGRAM: BIVALVE DEVELOPMENT by Dr. Ruth D. Turner of The Museum of Comparative Zoology, Harvard.

EUROPEAN NATURAL HISTORY MUSEUMS by William E. Old of the American Museum.

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HOW TO STUDY AND COLLECT SHELLS

The new edition of the American Malacological Union publication, entitled HOW TO STUDY AND COLLECT SHELLS, is now available at $2.50 per copy. This symposium, dealing with all phases of collecting and studying marine, freshwater, and land shells, has been very popular and was missed in the last few years. To obtain a copy, send your check for $2.50 to:

Paul R. Jennewein, Corresponding Secretary, AMU
P.O. Box 394
Wrightsville Beach, North Carolina 28480

Shell Clubs are offered a discount of 25% on orders of 10 or more copies, of 40% on orders of 50 or more.

FLORIDA SHELL SHOWS 1975

JAN. 23 - 26	Southwest Florida Conchologist Society, Fort Myers, at the Exhibition Hall on Edwards Drive.
JAN. 31 - FEB. 2	South Florida Shell Club, at the Museum of Science, 3280 South Miami Avenue.
FEB. 7 - 9	Broward Shell Club, Fort Lauderdale, at the International Swimming Hall of Fame, 501 Seabreeze Ave.
FEB. 10 - 15	Fort Myers Shell Club. Contact the Shell Show Chairman, Bob Bonner, the latter part of January for location. Phone A/C 813: 936-7104.
FEB. 14 - 16	Sarasota Shell Club at Civic Center Auditorium, 801 North Tamiami Trail, Sarasota.
FEB. 20 - 23	St. Petersburg Shell Club at Treasure Island Auditorium, 120 108th Avenue, Treasure Island, St. Petersburg.

From: Mollusk Chaser, Nov. 1974.

REVIEW:

AMERICAN SEASHELLS, Second Edition

by R. Tucker Abbott

663 pp., 4,000 illustrations, 24 color plates, extensive index. Van Nostrand Reinhold, New York, 1974. Price $49.50.

Every once in a while a work appears in malacology which inevitably colors and affects all succeeding studies in the field. This was so with the 1954 edition of Dr. Abbott's work, and is much truer of this greatly expanded new edition. This present edition is probably the most important single work ever to have appeared in the field of the study of our molluscan marine fauna. For in no other work can one find a complete listing of all seven classes of mollusks of our coastal waters. This single book thus readily displaces C. W. Johnson's 1934 list of the east coast mollusks and other similar lists for other coasts of North America. It will be for years the handiest reference book in its field.

Of the almost 6,500 species listed, some 3,000 are fully described, most of which are also illustrated. There is a complete systematic arrangement including superfamilies, families, subfamilies, genera and subgenera, the description and type-species being provided wherever necessary. The more important synonyms are also cited and each species citation has the author's name and date as well as the customary use of the parentheses, thus improving the utility of the volume for the specialist as well as the collector. Unlike his 1954 edition, Dr. Abbott also includes in the present one the basommatophoric Pulmonata like Melampidae and Truncatellidae, enhancing the work even more.

In such a massive compilation omissions and errors are almost inevitable, though the present reviewer, who made rather extensive use of the work in the last few days, found gratifyingly few.

As in the 1954 edition, Dr. Abbott found himself compelled to change a number of familiar names which, he writes, he does with considerable regret. It must be understood that these changes were not all initiated by the author, especially those involving generic shifts; he compiled the results of labors done by specialists in their respective fields. It can be expected that some of these changes will find opposition among other scholars, who might prefer to reduce some generic names to subgenera.

Saddest for the average collector is the resulting disappearance of old familiar names to be replaced with brash new forms. Among many changes, I note here these few:

Following the Treatise of Invertebrate Paleontology, Dr. Abbott records the changes from *Lucina* to *Linga* for *amiantis*, *leucocyma*, *pensylvanica*, and *sombrerensis*. *Anomia aculeata* Gmelin 1791 becomes *A. squamula* Linné 1758, *Pinctada radiata* Leach 1814 becomes *P. imbricata* Röding 1798; the much pushed around *Brachidontes demissus* Dillwyn lands in the genus *Geukensia*, but *Brachidontes citrinus* Röding 1798 becomes *B. modiolus* Linné 1758 (not to be confused with *Modiolus modiolus* Linné 1758). *Brachidontes recurvus* Rafinesque is shifted to the genus *Ischadium* and the grim northern *Venericardia borealis* Conrad finds itself in *Cyclocardia*. The nicely named

Antigona listeri Gray becomes *Periglypta listeri*. Among the gastropods the following changes were noticed: *Acmaea jamaicensis* Gmelin to *A. leucopleura* Gmelin, *Bittium alternatum* Say to *Diastoma alternatum*, *Cantharus tinctus* Conrad to *Pisania tincta*, and *Anachis translirata* Ravenel 1861 to *A. lafresnayi* Fischer & Bernardi 1856. *Fasciolaria hunteria* Perry becomes a subspecies of *F. lilium* and *Neptunea decemcostata* Say a subspecies of *N. lyrata*. Dr. Abbott in most cases briefly explains the reason for such changes but they are bound to cause sadness nevertheless. There will doubtless be many denunciations of such alterations, but the malacological world survived the severe trials of Röding's names in the 1930's and the numerous changes of the 1954 edition of American Seashells, and we will come through this storm as well.

This is a huge book weighing more than five pounds. Hence it is not surprising that Dr. Abbott chose to omit an extensive bibliography which he estimates might run to 10,000 items. However, he frequently includes references to the literature with the description of the shell. A great advance over the 1954 edition is that, except for 24 handsome color plates, all the figures are placed near the descriptions, thus obviating the need for frantic paging to find the appropriate illustration in inconveniently located plates. The book also provides "popular" names for many species in the -- probably vain -- hope that they may become standard. In this reviewer's opinion such names should more properly be termed "English" names since very few are really "popular." As such they provide a convenient handle for readers who prefer to avoid the use of the sesquipedalian Latin jawbreakers. In the long run, of course, it is the scientific name which must become popular. All in all, the new edition of AMERICAN SEASHELLS is an indispensable work for every person really interested in our marine molluscan fauna. The price may be high but not in terms of today's normal publishing costs and the value and extent of the information presented.

M. K. JACOBSON

MORE ON RAFINESQUE

The following letter was sent to the Editor by Dr. Henry van der Schalie of the University of Michigan. It is reproduced here with his kind permission.

Dear Morris:

Your article with the title: "Discord in Paradise III" was thoroughly enjoyable and I want to commend you for presenting a timely subject in an entertaining way. May I suggest that it would help if your readers were made aware of some of the pertinent literature that bears on this subject?

In 1922 Ortmann, Walker and Pilsbry *published a most important paper* dealing with the many difficult problems brought about by Rafinesque's introduction of new names for American mussels. In an article I am now having reprinted and one I shall have distributed soon it was clearly (I thought) indicated that many of the puzzles brought about through Rafinesque were skillfully and *fairly* judged when these matters were reviewed in the paper by A. E. Ortmann and

Bryant Walker (Occ.Pap.Mus.Zool., Univ. Mich., No. 112: 1-75, 1922). As you know, Frierson published his own version of the use of Rafinesque names and he did so in 1927 - some 5 years after the Ortmann and Walker publication. But he carefully avoided making any mention of the 1922 article (!) by his colleagues who did try to have him join them in making decisions about what names should be used to clarify the systematics. That situation set up a dual system for naiad nomenclature. I discussed all of this in an article in the Nautilus (65: 93-99, 1952) which I shall have redistributed since, as you indicated, what many of us knew as Carunculina is now again being graced with the name Toxolasma! It becomes a serious matter since these old dredged-up Rafinesque names are appearing on official government lists!

Two articles dealing with Rafinesque are both entertaining and important by way of approaching an understanding of the man. One was written by the famous David Starr Jordan under the title: "An Eccentric Naturalist" and appeared in a book with the title "Science Sketches."* It tells the story of how Rafinesque broke Audubon's violin catching bats, and the spoofing his host committed giving fish names and descriptions that the ichthyologists could not understand for many years later! I am sure there are half-truths because Rafinesque is reported to have hit bats with a violin bow, etc. Carl Hubbs and I tried for a couple of hours to catch bats with an insect net when hundreds of them were coming out of a cave in Guatemala. We never caught a single one! Their radar system is unbelievable and I can't believe the cock and bull story Jordan relates! Anyone interested in Rafinesque should read a very scholarly publication by R. E. Call: The Life and Writings of Rafinesque (J. P. Morton Co., Louisville, Ky. 227 pp.) which is Filson Club Pub. 10 - a rare book in our library. Call reveals that Rafinesque was really a genius who saw genera far and ahead of his time! He was, as so often happens, a prototype of our "hippy" and was most careless in his descriptions of what he knew was new to science. He was maligned by Lea, Conrad and others. Frierson became his champion and forgot that we can't right one wrong by committing another!

Your article in New York Shell Club Notes 206 is very timely and in the 45 years I have been at Michigan there never has been a time when the Rafinesque nomenclature was not a problem. Our colleagues just won't accept the excellent work of Ortmann, Walker and Pilsbry!

With best wishes,

Sincerely,

Henry van der Schalie

---

* Chicago; McClurg Co., 1896

ARTICLE OF THE MONTH

That Nerita plicata orients according to the sun is discussed by Dr. K. Warburton in an article entitled "Solar orientation in the snail Nerita plicata (Prosobranchia: Neritacea) on a beach near Watamu, Kenya" in Marine Biology 23: 93-100 (1973). It was shown that behavior is predominantly photonegative during the morning, photopositive during the afternoon; accuracy of orientation improves as brightness of sun increases and performance is not affected by high or low

water. Locomotory speeds are not affected by strength of sun, time of day or state of the tide.

Henry Russell

GLEANINGS FROM LONG AGO

In 1939 Imogene Robertson, then Secretary of AMU, polled most of the country's major museums for the size and scope of their shell collections. A sheaf of yellowed letters yields the following:

AMERICAN MUSEUM OF NATURAL HISTORY, Roy Waldo Miner, Curator of Living Invertebrates: "Approximately 30,000 species in our collection."

FIELD MUSEUM OF NATURAL HISTORY, Clifford C. Gregg, Director: "The cataloging of the Museum's shell collection having just started, I cannot at this time say how many species we have."

SMITHSONIAN INSTITUTION, Paul Bartsch, Curator of Mollusks: "We haven't the slightest idea. I don't even know the number of types in our collection. Immense collections without adequate force to administer them are not unmitigated blessings."

STANFORD UNIVERSITY, Myra Keen, Curator of Paleontology: "A brief survey gives the following approximate results: Recent American marine species, 2,100; exotic mollusks together with American land and freshwater species, 7,900. In addition we have 1,000 paleontological types and (about) 14,000 fossil species. I believe that ours will compare favorably with most university collections in size and utility."

ROYAL ONTARIO MUSEUM OF ZOOLOGY, John Oughton: "This inventory is only approximate; we have 25,000 lots of which 1,850 are species. We are weak in marine species but have fair representation of Canadian and American land and freshwater species. We must stand pretty near the bottom!"

MUSEUM OF COMPARATIVE ZOOLOGY, (Clench?): "25,640 species, 121,485 cataloged lots."

UNIVERSITY OF MICHIGAN, Bryant Walker: "135,000 accessioned, 30,000 waiting to be cataloged."

It would be interesting to learn to what extent these collections have increased in thirty-five years!

Margaret Teskey

Editor's note:

AMERICAN MUSEUM OF NATURAL HISTORY, William K. Emerson, Curator: "The malacological collection at the present time consists of more than 175,000 catalogued lots, totaling approximately 2,000,000 specimens." (1974) dr

THE JOSEPHINE BROWN COLLECTION

Mathilde Weingartner, who has been for many years on the staff of the Staten Island Institute of Arts and Sciences, informs us that the Josephine Brown collection of shells has been bequeathed to that institution. Miss Weingartner writes to us as follows:

Josephine Brown was apparently ailing for a while before her death,

and enhanced her collection with many specimens purchased from dealers. Most of these arrived at our Museum in fine condition.

In her will she left her collection to her daughter Mary-Louise Brown, who did considerable traveling as a concert pianist. It was Mary-Louise with whom I had the discussion about her will, and she promised to leave the collection to the Staten Island Museum, as her mother had requested. She had moved from her home in Great Neck, Long Island to Milledgeville, Georgia, and when she died her lawyer informed us about the shell collection and asked about packing the shells for shipment. They were very well packed, a fine job.

The ten boxes contained thousands of specimens, of

Marine Bivalves	-	27 genera	-	56+ species
Marine Univalves	-	100+ genera	-	300+ species
Land Gastropods	-	12 genera	-	19+ species
Fresh Water Gastropods	-	10 genera	-	12 species
Fresh Water Bivalves	-	3 genera	-	3 species
		150+		390+

The part of the collection presently on display at the Staten Island Museum is made up of shells to be appreciated for their beauty, their fine sculpture and lovely colors. Also, it brings to the viewer a feeling of the variety of life in the great oceans of the world.

FROM THE MINUTES OF THE NOVEMBER MEETING

President Frank Nelson reported having learned that someone has been writing to shell dealers in Australia and representing himself as president of the NYSC. The purpose, presumably, is to acquire instant authenticity. Mr. Nelson stated that the writer is neither himself nor any of the past presidents, and that if the culprit was present, or is a reader of these NOTES, he should consider himself advised to desist. Those present seemed unanimous in firm agreement.

Having heard from more than one source the opinion that the Club doesn't offer as much help as it should to beginning collectors, Frank asked for a show of hands by those willing to give time to any member requesting information. Eight responded, and questioners will be guided to those whose expertise is most pertinent.

The Shell-of-the-Month, by John Leone, was the genus *Teremachia*. In the family Volutidae, it includes a half-dozen species of which John showed photos of two - *barthelowi* and *johnsoni*, both from the Philippines.

Ken Sanger, aided by his son, David, presented a comprehensive picture coverage of a recent collecting trip to Bermuda. He opened by saying that their interest in shells began about five years ago when someone gave David a box of shells. Ken has naturally turned his considerable photographic talents to shells, as his artistically "posed" close-ups proved once again. Among his field pictures were several spectacular telephoto shots of terns in flight.

Veronica Johns, the second speaker, described a combined sight-seeing and collecting trip to Indonesia. Her camera caught some of the fascination of the funerary customs of the area, among other items of pictorial and narrative interest. Veronica snorkeled on a tiny reef

off the north coast of Borneo, which she said was "loaded." She also gathered about 100 species on the beaches there. Surprisingly, the only collector known in that area is Mary Saul, and there is little or no local interest. Veronica saw the collections that Mrs. Saul donated to, and curated in, the museums in Sabah and Sarawak, and the only two private collections of note in the area - those of Renate Wittig in Bali, and Clara Bundt in Makassar. Garuda Airline, which serves Indonesia, she described with one recollection: the hostess cut her finger and had to ask among the passengers for a band-aid.

Milton Werner, Recording Sec'y

MARK TWAIN VS. THE GARDEN SNAIL

In his essay, "A Majestic Literary Fossil," Mark Twain aims his cynical gaze at the efficacy of the garden snail as a medicament. The literary fossil is the "Dictionary of Medicine," 1745, a contribution to the public well-being by Dr. James of London, assisted by Mr. Boswell's Dr. Samuel Johnson. Here are a part of Twain's quote from the text and his comment, plus a bit of kibitzing from the sidelines:

"Aqua Limacum. Take a great Peck of Garden-snails, and wash them in a great deal of Beer, and make your Chimney very clean, and set a Bushel of Charcoal on Fire; and when they are thoroughly kindled, make a Hole in the Middle of the Fire, and put the Snails in, and scatter more Fire amongst them, and let them roast till they make a Noise; then take them out, and, with a Knife and coarse Cloth, pick and wipe away all the green froth: Then break them, shells and all, in a Stone Mortar. Take also a Quart of Earth-worms..." (And so on, through 13 herbs and the key flavor ingredients - shavings of hartshorn and double handfuls of goose and sheep dung. For some reason, this prescription was deemed to require anointing with ale - three Gallons, Strong. There's no accounting for taste.)

Twain observes, gracefully but ungraciously, "There. The book does not say whether this is all one dose, or whether you have a right to split it and take a second chance at it, in case you live. Also, the book does not seem to specify what ailment it was for; but it is of no consequence, for of course that would come out on the inquest."

Just don't forget to clean your chimney before concocting.

Milton Werner

'WARE THE WINTER! Recently dire predictions have been appearing in the press and elsewhere warning of a particularly severe winter ahead. Among other things, the snail breeders in the Piedmont regions of Italy call attention to the behavior of their snails, as reported in NEWSWEEK of October 10. According to them, snails normally start hibernating in November and burrow down a foot or so. But this year they started in October, "crash-diving to a depth of 3 feet." It's hard to visualize such molelike activity on the part of snails. But that's what the report says. Maybe somebody had better take the trouble to check just how deeply snails can penetrate the ground.

mkj

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NEXT MEETING: SUNDAY, FEBRUARY 9TH, 1975, at 2:00 P.M.

PROGRAM: RARE SHELLS (with color slides)
by William E. Old and Frank Nelson

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MORE FLORIDA SHELL SHOWS

FEB. 21 - 23	Naples Shell Club, Inc., at Central Mall, Goodletts Road, Naples.
MARCH 6 - 8	The Sanibel Shell Fair, at the Community Center, Periwinkle Way, Sanibel.
JULY 25 - 26	Jacksonville Shell Club, at the Jacksonville Beach Community Center, Jacksonville Beach.

MARGUERITE STIX

We were extremely sorry to hear of the death on January 10th of a very talented lady, Marguerite Stix, at age 67. She and her husband, Hugh, established their Shell Gallery in the drawing room of their home about 1963 and presented rare shells as objects of beauty in themselves. Their exhibits of beautiful specimens, each on its own special stand, became well known locally before their book, "The Shell, Five Hundred Million Years of Inspired Design," co-authored by R. Tucker Abbott, was published by Abrams in 1968 to bring them worldwide recognition.

Mr. and Mrs. Stix joined the New York Shell Club in 1964 and, though unable to attend meetings, were always most gracious in their contacts. Our deep sympathy is extended to Mr. Stix in his bereavement.

THE MALACOLOGICAL COLLECTION OF THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK, NEW YORK*

William K. Emerson
Curator

Some of the earliest collections obtained by the Museum were shells. Among the more notable of these collections are those of John C. Jay (1874), which consists of some 13,000 species, D. Jackson Steward (1893), William A. Haines (1870, 1879), and James Arnold Constable (1901-1905). Of the numerous expeditions sponsored by the Museum, large collections of mollusks were obtained by the Lang and Chapin Congo Expedition (1909-1915), The Whitney South Sea Expedition (1929-1930), and the "Askoy" (1941) and "Puritan" Expeditions (1957) to the tropical eastern Pacific. The bulk of the mollusks obtained by the Templeton Crocker and "Zaca" Expeditions to the eastern Pacific (1936-1938) were transferred to this Museum by the New York Zoological Society, in 1959. The collection at the present time consists of more than 175,000 catalogued lots, totaling approximately 2,000,000 specimens. The collection is world-wide in scope and is especially rich in representatives of the fauna of the tropical eastern Pacific.

In 1960, the Department of Living Invertebrates was re-established with Dr. William K. Emerson as Chairman, the first resident malacologist ever appointed to the staff*. During the years 1960 to 1964, a major reorganization of the molluscan collection was instituted with the support of the National Science Foundation. The services of Dr. H. E. Coomans, who is presently Curator of Mollusks at the Zoological Museum, Amsterdam, were obtained to re-arrange the collection according to modern classification.

Mr. William E. Old, Jr. was added to the staff, in 1960, to undertake general curatorial duties and to conduct a program of selective exchanges. Mr. Harold S. Feinberg, who joined the Department in 1968, curates the terrestrial gastropods, in addition to his other duties. Dr. William J. Clench (Harvard University), Mr. Morris K. Jacobson, and Mr. Anthony D'Attilio (San Diego Natural History Museum) serve as honorary Associates in Malacology, at the present time.

In the past two decades, many members of the New York Shell Club have generously provided the Museum with well-documented specimens from their collections and have made special efforts to obtain needed material for the Museum when on field trips. Thus the collection has been enriched through the kind efforts of club members, and they have assisted in the development of this valuable reference resource for the study of taxonomic and zoogeographic malacology. The Museum's collection serves as a central repository for the greater New York City area, and the scientific collection and the superb malacological library are available to all qualified students of mollusks.

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* The recent and fossil molluscan collections are now contained in the Department of Fossil and Living Invertebrates, which was established on July 1, 1974.

From 105th ANNUAL REPORT, AMNH

CREATURES OF THE OCEAN FLOOR

by Charles Pettitt

A report from aboard the Royal Research Ship Challenger published in COMMUNICATION, Univ. of Manchester (England) 74.1 : 17-18, 1974.

Foreword: On the 21st December 1872 the steam corvette HMS Challenger set sail on a voyage lasting three and a half years, during which time she was to circumnavigate the world and the small band of scientists and naval officers aboard were to make thousands of observations of the chemistry, physics and biology of the oceans. Their results were published in over 50 large volumes of Reports, and this prolifically successful voyage is now generally regarded as marking the foundation of modern Oceanography.

A century later, in the summer of 1972, a second Challenger was commissioned by the National Environmental Research Council. Challenger has worked mainly in the N.E. Atlantic, sailing from the headquarters of the Scottish Marine Biological Association at Dunstaffnage, near Oban, Argyllshire.

Mr. Pettitt, Assistant Keeper of Zoology in the Museum, is one of a group of nine scientists taking part in a new biological project, dredging the ocean floor for creatures. The project is known as BABS (Bathyal and Abbysal Benthos programme). He took part in the first cruise last September (1973). Now on the January cruise, he has filled in the background to the venture for us.

The benthos, or bottom dwelling animals, of the Bathyal region, that is the continental slope from 200m to 2,000m, and of the flatter Abyssal region, from 2,000m to 4,000m down, are still very imperfectly known.

A recent study by our colleagues at Woods Hole Oceanographic Institution, in Massachusetts, USA, revealed that in the bottom samples taken by them in recent cruises in the N.W. Atlantic as many as 40% of the animals found were new to science. Because of the history of more intensive work off British coasts, the expected frequency of new species in our hauls is somewhat less than this, but the still high probability of such finds heightens the excitement of the chase.

The present programme represents the start of a new phase in the study of the benthos. Up to now such studies have concerned themselves almost exclusively with descriptive biology, a phase which terrestrial biologists left behind a century or more ago. BABS will enable us to sample the same places on the sea bed every two months, so that hopefully we can begin to learn something of the community diversity, reproductive cycles, growth and mortality of the benthos.

The Continental Shelf is being exploited in numerous ways, with increasing speed; soon the slope and abyss will be called upon to pay their tributes to man's apparently insatiable god, Progress. Thus it is imperative that we attempt swiftly to learn something of what constitutes a normal N.E. Atlantic abyss fauna, so that we have some base-line against which to measure any perturbation caused or triggered by industrial exploitation.

One way of sampling the sea floor is to use a dredge; to fill the dredge it must be dragged along the bottom for 15 minutes. To achieve

the 15 minute dredge sample at, say, 2,000m, the ship will have had to steam steadily at low speed, 1 - 2 knots, for some four hours. But even when the gear is in over the stern the problems are not at an end. A heavy metal dredge, 8 ft. long and 3 ft. broad, laden with nearly two hundredweight of wet mud, can be a worrying thing even when steadied by two belayed ropes, each with a hefty deckhand on the end; if it escapes and swings at the end of its wire in wild circles around the rolling afterdeck it can be truly terrifying. Without devoted assistance from the officers and crew, field work for the benthos biologist at least would be severely hampered.

Once the sample has been removed from the dredge the labour of the scientists begins in earnest. The mud is first shovelled into calibrated dustbins to measure the volume of the 'catch'. Then, using seawater from hoses, the mud has to be washed through a fine 0·420mm mesh sieve, in order to separate out all the contained animals.

The sieving is sheer drudgery: 80 litres of glutinous clay can mean upwards of four hours of wet, cold, backbreaking toil to sieve from it the half-a-gallon or so animals it conceals. But once done, and with all the gear made secure, one retreats with the samples to the shelter of the lab.

Under present plans, half of the material collected by BABS will come eventually to the Manchester Museum, where it will constitute a very important addition to our zoological collections.

Most of the animals in the samples from depths over 1,000m are dead by the time we get them into the lab. They are killed not, as often supposed, by the change in pressure, but by the rapid change in temperature from the very cold ocean depths to the relatively warm surface temperature.

Some are more resistant than others; little amphipods, looking somewhat like multi-legged commas, swim endlessly round the examination dish; ophiuroid starfish gracefully wave their spindly arms. Large soft cigar-shaped holothurians are often present, to be treated with care as they have a tendency to eject the viscera if annoyed. Some of their relatives, the sea urchins, are also to be treated with respect - some have very thin, sharp, brittle spines, which can lacerate the unwary hand pushed into the sample and others can give a definite and unpleasant sting. If the lab lights are turned out and the sample gently stirred, often a multitude of soft blue flashes can be evoked from the luminescent organs of now-moribund creatures.

But for me, the pièce de résistance of the September cruise came when I came across a pair of freshly dead shell valves from a rare bivalve mollusc Halicardia. When I explain that there are, as far as I know, only three other specimens of this genus in this country, and I have only been able since to trace about a dozen elsewhere in the world, then some measure of my delight at this find may be judged.

There is a camaraderie in a sea-going research ship which draws one back, as does the never failing thrill of seeing each new sample fresh from the Ocean's Deep. That is why, hard work, long hours, wet, cold and sea-sickness notwithstanding, I am at sea on the January BABS cruise . . .

EXTRACTS FROM A CUBAN DIARY - I

Morris K. Jacobson

July 15, 1948. By overcrowded bus to Yaguajay (in Las Villas Province). Not a bad town, much better than Guane in Pinar del Río. Stay in the Gran Hotel, a two story wooden structure. Get El Gato to guide us next day.

July 16, 1948. From Yaguajay to Camboa by *gascar*, pronounced ga CAR. (A narrow gauge railroad with an engine run by an automobile motor). Telegraph vines decorated by numerous bromiliads. Sugar cane everywhere. The cane is till small. Like grass, it grows year after year without having to be replanted. Someone tells me they plant only every 30 years, but I think that is an exaggeration. Corn grows with dark purple husks. Six oxen pull one cart. Small pieces of ice delivered by "gascar" to customers whose name is tied to the ice. Man with a big machete cuts a log in two blows. Bohíos (cabins) painted with pink, blue, orange, yellow doors and window frames; some painted to imitate wood panelling; one with the door painted in the design of the Cuban flag. An armed Policía Nacional on the train, patched suit, busted out shoes. Towns passed: Cayo Alto, Santa Cruz, Ciruela, Seisbabo, Islita, Cambao, Bofil. Bad day: touch *tocino*, burns madly like thistle; get hand burned by the acid of a *mancoperro*, a millipede as large as a fat cigar who spits out an acid when he is annoyed which he is when he's in the way of some snails I want to collect -- hundreds of them in Tasajera; scared stiff by a guajiro (peasant) who assures me "en los ojos, ciego para siempre" (get it in the eyes and you're blind for life); not true, says the hotel clerk who used to be a charcoal burner in the hills. Weather so hot and muggy I actually wrung my shirt out as though I had dived into a pool. Ran face into a nest of wasps hanging from a tree, stung about 30 times all over. Stiffened by the pain and thus end to day's collecting at 3 PM. Home in heavy rain, first since I was in Cuba this time. Poor supper of fish, soup and fried platanos. Stations:

1) Yagüey, south of gascar line, many palms at foot of hill; moderate manigua (jungle) steep walls like in Pinar del Rió. Collect *Opisthosiphon*, *Bermudezia*, large *Urocoptis*, *Adamsiella*. 2) A dry arroyo at the foot with many dead *Ampullaria*. 3) Tasajera. Broken rocks, difficult *manigua*, hot collecting mainly a small urocopt, another urocopt that looks like a *Cerion*. Met two guajiros on horseback who cut me a spoon from a *yaguey* plant. 4) La Vega, worst of all places. Difficult climbing, poor collecting, stung by wasps; because El Gato got lost we had to climb the hill twice. Many *mancoperros*. In my hotel room I see a tiny banded lizard. At Yagüey I caught and freed a large caterpillar, 4 inches by 1 inch, 7 yellow lines on a black body, red tail and head parts. Oscar has head pains.

Friday, July 17, 1948. 4) Yigre, at side of road from Iguara to Yaguajay. Steep climbing but good shells, *Microceramus*, *Opisthosiphon*, *Annularia*, *Eutrochatella*. 4a) Cueva del Yigre. About 200 yards from 4). I walked to the south and didn't get into the cave, which had steep sides from where I stood. Collecting poor. 5) Camaján. Far walk through cattle fields. Very poor collecting, many *mancoperros*, nice view of surrounding country and sea. 6) Guainiabo. Long walk from Camaján. Very little till we got into the *manigua*. *Urocoptis* in

in one isolated spot. Restricted colony of Opisthosiphon. When manco perro is annoyed, his ejaculation smells like hickory sap. Hanging vines which, when cut, pour out a stream of fresh water. Ate too many oranges, feel sick, then better. Trees: tocino that stings like mad; true mimosa which folds up when touched; caimita, beautiful shiny leaves, green on top, coppery golden velvet below; bejuco, the water-bearing vine. All the places we collected in are part of the Sierra Bamburanao. Heavy rain this afternoon. I feel fine, wasp stings vanished except my nose feels as though it had been hit with a baseball club. When mosquitoes attack, I tell Alcalde to put twelve drops of a repellant into his hand and rub it over his neck and face. "No," he tells me, "I'll only put in ten drops. Cuban mosquitoes are not good at math. I'll fool them and they'll think I put in twelve." At his finca, a cow got into his shell study and ate up the volume of the Manual of Conchology dealing with the Helicidae. So he ate the cow and now he knows all there is to know about the Helicidae.

(To be continued)

REVIEW:

WONDERS OF BARNACLES

by Arnold Ross and William K. Emerson. 78 pp., 35 black and white illustrations, photographs and drawings. Index, glossary, bibliography. Dodd, Mead & Company, New York, 1974. Hard cover, $4.95.

This latest of the Dodd, Mead series of "Wonder Books" concerns a group of invertebrates with which shellers are familiar in varying degrees from carefully scraping them from a specimen shell to suffering numerous abrasions from accidental contact while field collecting along any coast. The information in this slender volume, wherein major types of barnacles are described, will impel the collector to examine these encrusting organisms for their interesting forms. Did you know that barnacles were assumed to be mollusks until well into the 19th century, that a Pacific coast species has protective spines, that some of the stalked barnacles are considered a gourmet dish (cooking instructions are given), that there is a species which bores into limestone, and still other species which have no shells?

The book is not intended for use in identification, as there are close to 1,000 species of barnacles, but instructs the reader as to the nature of these crustaceans which serve as food for many of our mollusks. We learn of myth and fact, how they reproduce, settle on almost any firm surface from rocks to whales, and feed and grow. The illustrations include photographs taken in the field, several finely detailed drawings by Anthony D'Attilio, a photograph by Dave Mulliner of an acorn barnacle opening its plates to feed, another by Michimaru Inaba of the process of fertilization, and one by Arnold Ross of a specimen in the cypris (late larval) stage. (Local collectors will recognize the cypris as the most active creature in the plankton in early spring.)

The selected bibliography guides the interested reader to further study of these cirripedes so often associated with mollusks.

Dorothy Raeihle

REVIEW:

COLLECTOR'S ENCYCLOPEDIA OF SHELLS

Edited by S. Peter Dance. McGraw-Hill Book Company, 288 pp., $19.95.

This book is recommended for those who wish to learn the systematic classification of mollusks. Furthermore, it is one of the few books available whose coverage is worldwide in scope. For this reason it is bound to find a large and satisfied audience. It is prepared in encyclopedic format, three columns of text per page; the illustrations appear within the columns of text. Several people who have used the book complained of difficulty in locating captions for the figures. To identify a given figure, the reader has to look for the heading for that species, which may be located above the figure, in a different species, which may be located above the figure, in a different column, or in some instances, on the preceding page. Some of the illustrations have captions beneath them.

All illustrations - nearly 1500 marine shells - are in color. Unfortunately, in a number of them the lighting is uneven. For example, the prints of *Conus gloriamaris* and of *Cypraea aurantium* are overexposed and almost unrecognizable.

In a book of this scope, covering worldwide gastropods, bivalves, chitons and scaphopods, errors and misidentifications are virtually unavoidable. Some that I noted were as follows:

Listed as:	Should be:
Lepidozona lineata Wood	*Tonicella lineata* Wood
Fissurella antillarum Orbigny, (1850-3)	*Fissurella barbadensis* Gmelin, 1790
Amblychilepas trapezina Sowerby, 1834	*Amblychilepas javanicensis* Lamarck, 1822
Acmaea costata Sowerby	*Patelloida alticostata* Angas
Acmaea stellaris Quoy & Gaimard	*Patella chapmani* Tennison-Woods
Littorina littoralis Linnaeus, (1758)	*Littorina obtusata* Linnaeus, (1758, has page priority)
Concholepas peruvianus Lamarck	*Concholepas concholepas* Lamarck

In the following instances I feel that the illustrated shells are misidentified:

Identified as:	Should be:
Littorina obtusata Linnaeus	*Littorina saxatilis* Olivi
Cypraea fimbriata Gmelin	*Cypraea gracilis* Gaskoin
Cymatium lotorium Linnaeus	*Cymatium perryi* Emerson & Old
Bursa rubeta Linnaeus	*Bursa bufo* Röding
Murex dilectus A. Adams	*Murex territus* Reeve
Marginella prunum Gmelin	*Marginella marginata* Born
Conus malaccanus Hwass	*Conus mutabilis* Reeve

The cut of *Vexillum taeniatum* is flopped and therefore is printed left-handed.

Illustrations for *Chlamys nodosus* and *Chlamys nobilis* are transposed; *i.e.* cut of *C. nobilis* is labeled as "*Chlamys nodosus*."

Chlamys gibbus Linnaeus is a West Atlantic species, not of "Indo-Pacific" distribution as stated. However, the figured specimens do not look like *C. gibbus* L., but appear to be the West African *Chlamys flabellatus* Gmelin.

Other localities with which I disagree:

	Given as:	Should Read:
Olivancillaria gibbosa Born	"Caribbean (Brazil)"	Indo-Pacific (SE Asia)
Oliva scripta Lamarck (≡ O. caribbaensis Dall & Simpson, Simpson, 1901)	"Indo-Pacific"	West Atlantic (Caribbean)
Marginella strigata Dillwyn	"West Africa"	Indo-Pacific (SE Asia)

William E. Old

FROM THE MINUTES OF THE DECEMBER MEETING

The program theme of the meeting was fossil mollusks. The chief speaker was Sidney Horenstein, a specialist in invertebrate paleontology on the staff of the American Museum of Natural History. Mr. Horenstein preceded his specific observations on fossil hunting in the areas surrounding New York City by outlining the succession of geologic events that shaped this part of the world. Periods of inundation by the sea alternated with periods of mountain building, followed in comparatively recent times by episodes of encroachment of glaciers.

He noted that heat and pressure long ago destroyed all evidence of fossil remains in much of the early rock formations in southern New York State and New Jersey. However, the molluscan fauna of later periods, especially from the lower Cenozoic on, are well represented. The richest deposits in the City itself were originally laid down in the Catskills, and then brought south and east by glaciers. Mr. Horenstein recommended several geologic maps and books as valuable tools for anyone planning to go fossil hunting in the NY - NJ area, and promised to provide the Club with a supply of maps showing local collecting areas.

George Raeihle showed slides taken during fossil-collecting trips in Florida, and Frank Nelson showed slides of collecting ventures in Florida and Antigua. Both included close-ups of fossil shells. Bill Old showed slides made by JohnHoleman of the General Electric Company using ultra-violet light, thus revealing color patterns that the centuries had made invisible to the eye. John Leone also contributed to the round-up of fossil photographs.

Milton Werner, Recording Sec'y.

LEXICOGRAPHICAL NOTES: Seawanaka, Long Island is named after the Indian word SEAWANHAKY*, meaning the land of shells for wampum. (N. Y. Times, 9/13/70). Coney Island was bought from the Canarsie Indians for 15 fathoms of SEWAN (shells used for money), 2 guns, and 3 pounds of gunpowder. (N. Y. Times, 5/6/73). Wampum was also called ZEEWANT and SEAWAN*. (Kessler & Rachlis, Peter Stuyvesant and his New York, 1959, p. 12.

MKJ

*See also NOTES No. 100, p. 6, "The Island of Shells." DR

ARTICLE OF THE MONTH

"The feeding mechanism and ecology of the New Zealand pulmonate limpet, Gadinalea nivea" is the title of a paper by Drs. J. R. Walsby, J. E. Morton and J. P. Croxall in Journ. Zool. London 171: 257-283 (1973). They indicate that these molluscs situated in small concavities, away from light, under ledges, exposed to heavy surge, do not move much and live in aggregated colonies. To feed they orient to the current, lower the body while hanging upside-down and lavishly produce mucous that balloons out in front of the head, carried by the water currents. This mucous balloon entraps particles of plankton until it is loaded. At close intervals it is inspected by the extended oral lobes, is enclosed by a hood formed by these lobes and ingested.

Henry Russell

ARE MOLLUSKS HEMOPHILIAC?

QUESTION: One of the unfortunate things about diving for Abalone is that the animal may sustain deep punctures in its foot or other soft parts when it is scraped off a rock to be measured to ensure that it has reached a legal harvestable size. Many divers believe that abalone are hemophiliacs and that a wounded one will bleed to death even if immediately placed back on the site from which it was taken. Is this true?

ANSWER: The blood of abalones, like that of all molluscs, lacks coagulating proteins and, consequently, these animals are susceptible to blood loss following an injury. This is prevented to some degree by the clumping together of blood cells; however, there is still a risk that fatalities will result from even a minor injury.

(Sea Secrets, 1972, Vol 16, No. 5 (Fourth Series)

Editor's Note: This is true of Chitons as personally observed in the aquarium: At first a lesion on the foot is coated with a jellylike substance which seems to be a slight thickening of the almost colorless haemofluid. Such wounds have always worsened and the animal has declined and died within a very few weeks. In contrast, a healthy, unblemished specimen may live up to two years in captivity.

Dorothy Raeihle

OHIO NOTABLE HONORED - Dr. David H. Stansbery, a zoology professor who has served as a board member of the Columbus Audubon Society, was one of 11 state residents to receive 1974 Conservation Achievement Awards from the Ohio Dept. of Natural Resources last month. He is known for his interest in natural areas and free-flowing streams.

(Ohio Publication)

Our congratulations to Dr. Stansbery of Ohio State University. A past president of AMU, Dave is well known as " a freshwater bivalve man" -- but he collects other bivalves, and gastropods, too. The award could not have been given to a nicer person or to a more deserving worker.

JANUARY, 1975, SUPPLEMENT TO ROSTER OF NEW YORK SHELL CLUB

We welcome our new members, and bring you up to date on changes in address since our supplement of June, 1974.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MARCH 9, 1975, at 2:00 P.M.

PROGRAM: DISCOVERING PATTERNS ON SHELLS (with color slides)
by S. Peter Dance

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ANNUAL SHELL-SOCIAL APRIL 13TH

The April meeting is catching up with us rapidly and plans have to be made; but more importantly it's time to look through your duplicate material for donations to the auction and the bargain table. Shells, books, and odds and ends are all welcome and needed. Bring your donations to the Broadway Dance Studio on the day of the Social and Bill Old will perform his usual magic to convert your contributions into an exciting auction -- and if Harold Feinberg performs as usual, the Bargain Table will be transformed into a cornucopia of goodies before your very eyes. We must again prevail upon our corps of bakers to contribute cakes for dessert. Remember that the Social will only be as good as the cooperation of all members can make it.

Frank J. Nelson, President

EXHIBIT AT WHITE PLAINS

The White Plains Public Library is featuring "Shells in Nature and Architecture" an exhibit of shells, shell photographs, and architectural designs derived from shells, at 100 Martine Avenue, two blocks from the railroad station in White Plains, New York, through the end of March (closed on Sundays). The shells and pictures of shells are the contribution of our member Ken Sanger.

NEW REVISED EDITION AMU PUBLICATION NOW AVAILABLE --

At the March Meeting we will have copies of "How to Study and Collect Shells" many of which have been ordered by you at the last several meetings. There will be extra copies, so that if you didn't sign up in advance you need not be disappointed. This small book is a publication of the AMU and very possibly the best basic reference book that you'll ever get, no matter what your area of principal interest.

F.J.N.

THE CLUB'S BADGE --

At the March meeting we should also have news from the manufacturer about the club badge. The enameled badges will be made with a safety pin type back which is the most all-around useful type of fastening. The badge will be approximately the size of a five-cent piece and will be in Tan, Blue, and White enamel over a Gold colored metallic backing. (The Australian Shell Clubs have been using this type of badge for a number of years; perhaps you'll be able to trade one of ours for one of theirs if you have friends over there.) The price of the badges will be two dollars each.

WE WELCOME A NEW SHELL CLUB

The Long Island Shell Club had its first official meeting at the Central Federal Savings Bank in Hicksville on January 22nd. Several NYSC members residing on the Island were among the 35 prospective members who attended. From the enthusiasm of those present it appears that this new organization has a promising future. All are welcome.

Meetings are scheduled for the 4th Wednesday of each month at 8:00 PM, September through June. For further information you may telephone -- Sol Weiss at 516: MA 1-6571.

Sol Weiss

H. ERIC MUSNICK

We were saddened to learn of the death last August of our member Eric Musnick, at age 56, after a period of ill health. Our deepest sympathy is extended to his wife, Elayne, and their family.

Eric and Elayne joined the New York Shell Club in 1957 and took an active interest in the affairs of the club. Eric was intrumental in making the long-talked of Club library a reality.

We must again remind you that the Editor is always in need of articles for the Notes. If you have traveled somewhere and had good collecting or even poor collecting, share it with all of us; perhaps someone else is planning a trip to the same place and could profit from your experiences. You undoubtedly have an observation regarding shells or shelling which would be of interest to others; please write it up and submit it to the Editor.

I spent the month of August in Europe visiting museums, with the following itinerary:

Geneva: The Museum d'Histoire Naturelle is housed in a beautiful new building situated in a small park. Dr. Eugène Binder is Curator of Mollusks. The shell collection is housed in Compactus Cabinets, which resemble library book stacks. The units move on tracks, and can be moved apart manually to examine the contents of a given unit.

It was a delight to examine the actual shells that had belonged to and had been described by Lamarck, Hwass, Delessert, and others. Also I was given a behind the scenes tour of the new 'Gallery of Invertebrates,' a display that was in the process of preparation and installation. Dr. Binder said that the museaum's specimen of Conus gloriamaris might be put on display.

A few words about museum collections and exhibits are in order. In the Victorian Era, it was customary for museums to have on view large displays of natural objects. Exhibit cases were crammed with thousands of shells, insects, birds, or arrowheads, and virtually no explanatary text. Today the situation is reversed. Institutional displays consist of examples of specimens to illustrate the labelling or 'Story Book Text.' The actual collections of shells, et cetera, are maintained in cabinets of drawers for study and reseach.

Paris: The Museum National d'Histoire Naturelle consists of a number of buildings located in the Jardin des Plantes and along the adjacent Rue Buffon. The Palèontologie Building contained excellent exhibits of Paris Basin fossil shells, as well as magnificent collections of ammonites, trilobites, and brachiopods. Two dinosaurs were labeled as gifts from the American Museum of Natural History early in the 20th Century A building on Rue Buffon contained a special exhibition, "The World's Most Beautiful Insects." Only one gallery was open in the Zoology Building, and it was devoted to a special exhibition, "The Sahara." One case contained specimens of Tympanotomus and Marginella collected in the Sahara, far from the present day West African Coastline.

When I inquired about the main zoology galleries, I was told, "The rest of the exhibition hall have been closed for 8 years. The roof is caving in."

Antwerp: Some of the Club members may recall Dr. Ben Tursch, of Brussels University, who once spoke to us about shelling in Brazil. When I visited the Tursch's two years ago, they had a young cassowary from New Guinea as a house pet. This year, "Casu" was on display at Antwerp Zoo, labelled, "Sclater'a Cassowary. New Guinea. Gift of Dr. Bernard Tursch."

Leiden: The Natural History Mueseum had a two gallery special exhibit, "Dieren op Postzegels," or Animals on Postage Stamps. Two cases were devoted to mollusks on stamps. The shell collection in Leiden is housed in special cabinets with runners, that make it virtually impossible to drop a drawer. The collection is a large one, and contains a fine specimen of Cypaea fultoni - the only one that I saw in Europe. There were three specimens of Conus gloriamaris, Conus victor from Flores, Conus adamsoni, Conus cervus, and Conus Thomae.

Amsterdam: The buildings of the Zoological Museum form one of the boundaries for "Artis," Amsterdam Zoo. Our former member, Henry Coomans, is Curator of Mollusks. This collection also contains a large number of classic rarities. Among them were specimens of Cypraea valentia, Cypraea guttata, 2 sinistral Xancus pyrum, and a Conus gloriamaris. There is a fifth specimen of C. gloriamaris in the Netherlands. It is located in a natural history museum on the grounds of the Rotterdam Zoo.

Zoos in Europe contain something almost unknown in America - Insect Houses. And in most Insect Houses, one finds one or two exhibits of land snails. An exhibit of Achatina is customary, though I have seen Strophocheilus and others displayed.

Bergen has an excellent marine aquarium. A number of tanks contained living mollusks, such as Buccinum, Pectens, Lima excavata, and other mollusks from Norwegian waters.

Oslo: All new exhibits were being installed at the Natural History Museum. One alcove contained a display of Norwegian mollusks; land, marine, and freshwater. Curator of Mollusks is Dr. Thor Bakke. He is also Curator of Parasitology, as well as responsible for writing label copy for all exhibits in the museum.

Helsingors, Denmark has an aquarium that displays shallow water fishes and invertebrates collected locally from the Kattegat. Danmarks Aquarium at Charlottenlund is one of the best that I have seen. One room contained an exhibit on "Pond Life" with small tanks of Planorbis, Lymnaea, Daphnia, etc.

Zoological Museum, Copenhagen: The shell collection contains the holotype of Conus gloriamaris. Dr. Lemche, retiring as Curator, showed me the holotype of Neopilina galathae. Dr. Jørgen Knudsen is now the Curator of Mollusks. The shell collection contains the collection of Johann Chemnitz, as well as several others. As in other museums, new displays were being prepared in the exhibition areas. A specimen of the extinct Great Auk was on display.

In the Aquarium at Hagenbeck's Tierpark, Hamburg, a living Tiger Cowry was busily exploring its tank. The Exotarium in Frankfurt Zoo displayed tanks containing living Cymatium, Cypraea, the shell of a specimen of Syrinx aruanus, and a large tank of living Achatina achatina from West Africa. Several aquaria in Europe displayed the bitterling, a small European freshwater fish that lays its eggs in living Unio pictorum (see NYSN 182, p. 6) The oldest inhabitant of Zurich Zoo was a Florida Garfish, in residence since 1927. William Old Jr.

ARTICLE OF THE MONTH

If you are the natural prey of the cuttlefish, Sepia officinalis, you may be captured even though you are not in the water with it, as shown by Dr. S. V. Boletzky in his article, "A note on aerial prey -- capture by Sepia officinalis (Mollusca: Cephalopoda)" in Vie et Milieu, 23: 133-140 (1973). The cuttlefish can attack, and capture prey shown to it above water by ejecting the tentacles from the water or by leaping out of it to capture a crab suspended on a thread above it. The visual nature of the attack is discussed.

Henry Russell

LITTORAL MARINE SHELLS OF THE FLORIDA KEYS

Margaret C. Teskey

For a century the Florida Keys have been a Mecca for malacologists, and served as type-locality for countless new species. However, over the past decade real estate development has taken an everincreasing toll, and silting and pollution damage is apparent as whole colonies of mollusks are reduced or vanish altogether.

In even more direct fashion man has been responsible for the nearextinction, in shallow Keys waters, of Strombus gigas, the beautiful pink conch that gives its name to those who in the early days depended upon it as a staple food item. Protective legislation was slow in coming and by the time the eight-per-day, for-food-only restriction was imposed by the State, collectors were hard put to obtain their limit, and all too prone to take immature shells. Though abundant still in deeper waters offshore, it is now a rarity when the snorkeler comes upon a "big pink" with its frilled flaring lip.

It seems reasonable, then, to compile the results of eight years of collecting littoral species in the Florida Keys. Since 1966 sixty-eight stations have been made in the bays and shoals from Key Largo to Key West, around Content and Sawyer Keys in the Gulf, Looe Key, Pelican Shoals and Dry Tortugas in the Ocean. In most cases living shells were taken at four feet or less with snorkel and mask, though in some instances good dead specimens from beach drift were taken for the record. Notable among these were two small (3-1/2") specimens of Pinna rudis found washed into tidepools on Big Pine Key and Missouri Key. Rosewater remarks (JOHNSONIS, Vol III, p. 306) that this West African species is occasionally transported on floating wreckage and buoys, and occurs rarely in Puerto Rico and the Virgin Islands.

That Cittarium pica, so abundant in the nearby Bahamas, used to flourish in Florida waters is attested by an occasional "bone" on beaches of the westernmost Keys. However, recent diligent search has failed to turn up a single living specimen of the magpie shell.

Just below tideline, the walls of an ancient quarry on Crawl Key are riddled with the spectacle-shaped burrows of Botula fusca; would-be collectors must be armed with a chisel or sharpened screwdriver. A colony of Calliostoma adelae flourishes among turtle grass in a boat basin on Little Torch Key, and from the same vicinity came one specimen of Cylindrobulla beaui, dead but twice the size of the published norm.

Perhaps the most notable discovery over the years has been the small but dense colony of Emarginula dentigera Heilprin on Big Pine Key (NAUTILUS, Vol. 87 (2) p. 60). Hundreds have been taken and distributed among interested collectors, yet the colony thrives and will, it is to be hoped, escape the fate of other rare species.

At the present time the checklist total is 309, a figure subject to revision up or down as review reveals that a good species is really not good but must be placed into a more commonplace lot, or that a series contains one or more species deserving of specialized recognition. Latest in this category was the discovery of little strangers in a lot collected in 1970 on West Summerland Key and labeled Neritina

virginea. Recent inspection, bolstered by collecting live material from the same site, revealed that though living chock-a-block in the same tidepool, they may be separated into two sharply defined lots. Submitted to Dr. Henry Russell, who has especial interest in this family, his opinion came as complete surprise. "Those with the yellow operculum (and sooty sole) are Puperita tristis, those with black operc are Neritina meleagris!"

A FURTHER NOTE ON RAFINESQUE

Anthony D'Attilio

It is unfortunate that so much emphasis has been put upon Rafinesque's weaknesses and not enough upon the merits of this multifaceted genius. If he erred repeatedly in his work on natural history, it should be remembered that he lived in a time when procedures in taxonomy had not reached the standards set for today. In spite of this, many think that in some respects his work is far ahead of the work of his contemporaries.

Here I would like to bring to the attention of the readers another biography of Rafinesque besides the one mentioned by Dr. van der Schalie in his recent letter (See NYSC NOTES No. 207, p.4). He mentioned the one by R. E. Call, 1895, entitled "The Life and Writings of Rafinesque." That biography lists only a portion of the writings of Rafinesque ranging over many branches of natural history in addition to mollusks. Although his principal efforts were spent in Botany, Rafinesque also wrote on numerous other subjects ranging from religion to banking etc. The works listed by Call amounted to more than 200 titles. A later biography is "Rafinesque, a sketch of his life work and bibliography" by T. J. Fitzpatrick, 1911.* This volume lists 939 titles and also provides an indication of unpublished manuscripts, the number of which is difficult to assess. Fitzpatrick's work also has an appendix called "Bibliotheca Rafinesquiana" with 134 titles of papers by various authors in which Rafinesque, or some work of his, is discussed whether favorably or unfavorably.

I recently read somewhere that Rafinesque's body was returned to Transylvania University in Lexington, Kentucky where he once resided as a professor. This honor was granted him although he had never had a formal education. I think that this says much for the respect in which many people still hold him.

Some students of Rafinesque have concluded that his major fault was in having been born 100 years too soon. Those who are interested in the workings of this extraordinary mind should read carefully the two biographies mentioned here. However, the last word on this amazing man still remains to be written.

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* Rafinesque, a sketch of his life work with bibliography, by T. J. Fitzpatrick, 1911. Des Moines, the Historical Department of Iowa. Pages 1-241 (62 pages of biography, 179 pages of bibliography.)

FROM THE MINUTES OF THE JANUARY MEETING

The first of the day's two presentations was a slide-tour of Europe, with description by tourist Bill Old. To no one's surprise, he evoked a continent made up largely of zoos and natural history museums. One of the latter, in fact, even served him in place of a hotel. Bill did show enough scenic photos, though to give reassurance that Europe is still pretty much as it has been. Among his stops were Geneva, Leyden, Paris, Antwerp, Amsterdam, Bergen, Oslo, Helsingors, Copenhagen, Hamburg, Hannover, Duisburg, Frankfort, and Stuttgart. As a fitting variation on the traditional sunset finale, Bill ended with a picture of the midnight sun, taken from Norway's North Cape.

We were pleased to again welcome to one of our programs Dr. Ruth Turner, of the Museum of Comparative Zoology, Cambridge, Mass. Her subject was bivalve larvae, with emphasis on the effects of the various types of larvae in determining the distribution of species. Among the larvae of the teredos, or shipworms, for example, are three of the five types: swimming larvae; larvae that remain planktonic only briefly, without feeding; and the type that settles to the bottom immediately after release. Dr. Turner noted that most of the study of bivalve larvae has been done since the 1930s. One reason why it has lagged behind the work done with gastropod larvae is the difficulty of identification. She pointed out that the body of knowledge could be expanded by anyone capable of collecting plankton and raising the bivalves found in it until recognizable, recording their development with sketches. Dr. Turner illustrated her remarks with slides, most made through a microscope, and several with a scanning electron microscope. When clean shells were required for photos, she noted, the job of cleaning minuscule specimens was turned over to some very small resident anemones which accomplished the task to perfection.

Milton Werner, Recording Sec'y.

THE OLDEST AMERICAN MANUSCRIPT IN THE PRINCETON UNIVERSITY LIBRARY?

Would you believe a conch shell?

"When thinking of manuscripts, one ordinarily envisions handwriting on a piece of paper," observes Robert S. Fraser, curator of rare books. "This conch shell, incised with Maya hieroglyphics, is a startling exception to that notion."

As to that conch shell: it really is the oldest American manuscript in the Harvey S. Firestone Memorial Library at Princeton University. The shell is dated March 17, 761. It is Mayan and was probably used in a ritual ceremony of some kind. Scholars have thus far been able to read only the date in the incised inscription.

Excerpt from a Princeton area newspaper.
Submitted by Ruth A. Craine.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in Room 319 of the AMERICAN MUSEUM OF NATURAL HISTORY, with the following exception:

NEXT MEETING: SUNDAY, APRIL 13th, 1975

THE PLACE: BROADWAY DANCE STUDIO
31-08 BROADWAY
ASTORIA, QUEENS

PROGRAM: ! ! ! PARTY ! ! !

* SEE BELOW FOR TIME OF HAPPENINGS AND FOR DIRECTIONS TO THE STUDIO

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NYSC ANNUAL SHELL-SOCIAL APRIL 13th:

*

Next meeting will be our annual social meeting held, not at the Museum, but at the Broadway Dance Studio, 31-08 Broadway in Astoria. We thank our member Dorothy Jensen for again graciously making her studio available to us for our party. The studio is easily reached by BMT subway, ASTORIA line (RR train) to the BROADWAY stop. The building is on the southwest corner of 31st Street and Broadway; it is only a few steps from the BMT exit to the door of 31-08 Broadway. It is a short trip -- about twenty minutes from Times Square.

The afternoon is being planned especially as a totally fun affair with no built-in seriousness; a day of relaxation and social conviviality to give us the opportunity, not possible at the regular meetings, to get to know each other on an informal basis.

As in the past, we will have an auction, a bargain table, a raffle of a recently published shell book which is being donated by "Seashells Unlimited, Inc.", a door prize, and a fun slide show. The cocktail hour (there will also be punch) will be followed by a buffet supper topped off by coffee and a selection of pastry specialties brought by the ladies of our volunteer baking corps.

Naturally it will be necessary for you to help make the affair a success by making as many contributions as you can, be they books, shells, artifacts or whatever. Look into your shell cabinets, boxes and trays for duplicates and other specimens you can donate for the

auction. As for the bargain table, surely everyone has something which he or she might consider "trash" which could be magically transformed into another person's treasure.

Bring your items for the auction and bargain table as early as you can -- preferably 1:00 PM -- so that the materials may be arranged for display as early as possible. Bargain table sales will open at 1:30 PM; the auction will begin shortly after the meeting is called to order at 2:00 PM.

To cover partial costs, it was voted to make the donation at the door $4.50 for each adult and $2.25 for children. Yes, members may bring guests.

We look forward to a great afternoon!

Frank J. Nelson, President

FROM THE MINUTES OF THE FEBRUARY MEETING

Among the visitors at the meeting were Dr. and Mrs. Wendel Lim, of the Philippines. Dr. Lim, a member of the faculty of the University of the Philippines, and an officer of the Philippines Shell Club, rose to convey the greetings of the members of his home club, and said that its bulletin will welcome articles from other parts of the world. Dr. Lim also identified five shells he had brought as a gift to our club. These were accepted with gratitude and, it was later announced, became the first contribution to the stock of auction material for the April social meeting.

President Frank Nelson read a newspaper article stating that recent cleanup efforts on behalf of New York Harbor are showing results, and citing as one proof the reappearance of the ever-persistent teredo in the woodwork of harbor facilities and small craft. He also mentioned an article in the current issue of Scientific American on the techniques of raising land snails in a terrarium. This generated a period of lively question and discussion.

The subject of the meeting's program was Rare Shells. The first presentation was a series of slides by Mart Hulswit, Robert Janowsky and Frank Nelson, who provided identification and comment. Harold Feinberg then spoke on non-marine rarities, and went on to discuss the reasons for their negligible market value. He displayed, in two small vials, a few shells representing about half of the known examples of two species, and estimated that each lot might fetch 25¢ at the typical auction.

The final speaker, Bill Old, had on display (under glass) a number of shells from the Museum collection that are particularly sought after, partly because they are, or once were, rare. He explained the seven varieties of circumstance that produce actual or assumed rarity. Bill ended with a showing of slides of rare shells, accompanying many with fascinating observations on the impact of the species, or individual specimens, on the history of shell collecting.

Milton Werner
Recording Secretary

EXTRACTS FROM A CUBAN DIARY II

Morris K. Jacobson

Sunday, July 18, 1948, near Yaguajay, Las Villas Province:

Long muddy walk from station to western end of the Cerro de Guajabana. Collect urocoptids for Cliff Blakeslee. Very hot. Some guajiros (peasants) take us to an ensenada (embayment) -- good spot but we don't stay long. Get Euglypta, Opisthosiphon and 4 mancoperros. Says a farmer, to me: "Los comunistas no alcanzáran a poder porque no lo permitiria los Estados Unidos." (The communists will never come to power because the USA won't permit it.)

Names of locomotives on the narrow track railroads gascar: Pedro Pablo, Don Alvaro; one car still bore faded letters of Gainesville-Midland. Discarded tin cans converted to kitchen containers. In one house they are used for cooking, in another we were served coffee in old salmon tins. The jaguey is a tree with many narrow trunks, saw one in Finca La Marisa. Typical Cuban scenery: cane fields, royal palm trees, bohíos (steep-roofed peasant huts). Men on gascar look clean and neat. High old stone structures from the "time of Spain" fortresses lined up to cut the island in two at Las Villas. People call loudly to friends from one train to another.

Everybody greets our guide El Gato vociferously. All the girls look like Lillian (the writer's handsome niece). Rich cattle country but the bohíos very poor. Old election posters for Presidente Prío are still up. Peculiar handshake: grasp hands and pull down sharply. Barber works out in the open. At side of the railroad huge lifts to remove the cane from the wagons. Lots of nice new school buildings. Wasp bites of yesterday itch like the dickens. Next time look for wasp nests while looking for shells. Impossible! My mancoperro stains begin to blister.

Everybody wears a machete called a Kahleéng (from Collins, the Hartford, Connecticut house that manufactures most of them. The name "Collins" is stamped near the hilt, hence the expression "hasta el Kahleéng" (up to the Collins) meaning to the hilt, to the ultimate degree, e.g. "te golparé hasta el Kahleéng" = I'll beat you up to the Collins, i.e. an inch of your life.

Orestes and Hercules (pronounced Orehte and Ercule) are common names here. The jaiba is a freshwater crab. We sit in a wayside kiosk, the drunken proprietor calls me "meethter" (mister) in a disagreeable manner; Alcalde keeps me from tangling with him. People play much dominoes. Just when I'm really angry I meet and have a nice chat with Don Francisco Terro from Narcisa. Visit the Krosts again, talk much English with a young boy anxious to "praticar el ingléh."

Monday, July 19, 1948:

Typical costume of better-off farmers: polished boots, white or gray breeches, blinding white guayabera (pleated shirt with four pockets) hanging over the trousers, and a jipijapa (panama hat with a wide brim). Lottery tickets cost $25, but are sold in parts, 25 centavos for a hundredth part; premio gordo (main prize) is $250,000. Money from lottery goes to hospitals (they say), winnings can be collected in any bank.

Station 7 at Alto Yigre. Collected a Bulimulus while climbing in a tree, put it in my breast pocket but the beast escaped. Also Opisthosiphon and Annularia.

Station 8 at Peñón. Poor collecting. Salvador García Caruncho of Yaguajoy helped us enthusiastically, but brought only broken dead stuff. "Sirve? Sirve?" (Is this any good?) he'd ask gleefully. "Chico, no sirve," we'd have to say.

Station 9 at Cañada de Valdés, a shaded dry rocky river bed. Best spot so far, with vast numbers of chondropomids everywhere on the rocks like Littorina in Rockaway.

Station 10 at Urbasa, along a low stone fence. Countless narrow urocopts sticking out like spines from the underside of any rock in the fence. Filled two good-sized boxes. Back home very tired. Two strong Cuba libres, drunk as hell. Buy blue breeches, hope they'll do.

Best thing today, besides the collecting in Cañada de Valdés and Urbasa, was the wild Cuban fruit growing everywhere in the jungle: (1) drank the water of three green coconuts fresh off the trees -- delightful; (2) drank the water from the bejuco para, the liana which gives generously when it is cut; (3) ate many jobos, golden orange-colored, small plumlike fruit with a large seed and thin layer of meat; (4) ate mamoncillos (called quinepe in Puerto Rico), small green round fruit, hard skin, large pit, relatively thin but tasty and juicy meat -- called "comida de bobo" (fool's food) by the Cubans because "cáscara dura, semilla grande, poca masa" (hard rind, large seed, little meat). Alcalde scares me: I had a bottle of beer and then began to eat mamoncillos. "Cuidado, chico, venenoso" (careful, poisonous) he yells. Convinced that mamoncillos on top of beer will kill you. It didn't me. Not even make me sick. Felt fine until the Cuba libres came along. (5) Mangos growing everywhere, littering the ground six inches deep; (6) Caña fistula, about two feet long, slender as a cane, hard smooth crust. Break it open and pull out round flat seeds immersed in a brown sweet juice. Delightful sucking. Some bushes: chichicate, very prickly, even to the leaves; ortiguilla, nettles; piñón de botigo with small poisonous fruit; guao with shiny leaves like holly trees but very poisonous to the touch, worse than poison ivy; guanábana, a tree with the delicious fragrant john fruit, but not yet ripe; platanito, ditto, with long curved spire like an English plantain; guásima, little black prickly fruit, excellent for pigs. See a perorera, a bird with a green head, red beak, see many in the Cañada de Valdés. All in all a nice place to go shelling, but be on guard!

ARTICLE OF THE MONTH

"The erosion of limestone coasts by date mussels" is the title of an article by Dr. K. H. Kleemann in Oecologia 13:377-395 (1973). It was found that type of substratum and inclination angle of the coast determine the distribution and population density of these mussels, Lithophaga lithophaga. The first 10mm of growth occurs in the first 3 years, and the biggest mussels (80mm) will be about 80 years old. The destruction of the coast by date mussels is limited to relative-

ly small areas but may amount to more than 40cm/m^2 at a depth of 1 - 2 meters and continue for a period of 1000 years on steep oolitic limestone slopes.

Henry Russell

Browsing through an issue of "The Journal of the American Medical Association" I found the following which might be of interest to our members:

TREATMENT OF JELLYFISH STINGS

In a "Letter to the Editor," John S. Loder suggests a simple and easily available treatment for jellyfish stings. The remedy: any papain-containing meat tenderizer (e.g. "Adolf's") is sprinkled liberally on the wetted affected area and allowed to remain until the stinging has abated.

At the turn of the century an anthropologist reported that natives stung by Portugese man-of-war would apply a cut papaya to the affected surface with obvious relief. Mr. Dave Cargo of the Natural Resources Institute in Solomons, Maryland used this bit of evidence to rediscover this old treatment in the mid '60^s. Papain is a protein-splitting enzyme. The toxins released from the nematocysts at the tentacles of the jellyfish are usually simple polypeptides which papain rapidly cleaves into nontoxic amino acids.

Ref: Loder, J.S.: Letter to the Editor, JAMA 226:1228, 1973.

Maria L. Falter

A FURTHER NOTE ON CONSTANTINE RAFINESQUE

In recent numbers of these NOTES we have given space to the case of Rafinesque, who was either a consummate charlatan or a much maligned genius. We pointed out that, genius or not, he was most unfairly treated by American conchologists who simply chose to overlook his prior names and recognize their own later ones as valid. This unpleasant spectacle did not go unnoticed -- and uncriticised -- by at least some students in other parts of the world. This can be seen in the following excerpt which is taken from an unpublished letter dated October 12, 1856 written by the great Cuban scholar Felipe Poey to the American W. G. Binney. The letter is in the library of the Department of Mollusks in the Museum of Comparative Zoology of Harvard University.

Poey wrote as follows: "Je crois que vous avez tort de ne pas adopter les noms de Rafinesque, lorsqu'ils ont la priorité, v.g. Hel. planorboides (concava Say), clausa Raf. (inflecta Say). Je suis en cela l'example de Pfeiffer, Mongo. Helic." This translates into: "I think that you are wrong in not adopting the names of Rafinesque, since they have priority, e.g. Hel(ix) planorboides (concava Say), clausa Raf. (inflecta Say). In this I follow the example of (Ludwig) Pfeiffer, Monog(raphia) Helic(orum) (Viventium)."

Even though the names mentioned by Poey are now properly rejected as nude (i.e. undescribed) names, this letter shows that foreign scholars were painfully aware of Rafinesque's plight in America and voiced some objections to it.

mkj

PUKA* SHELLS AND SEQUIN SHELLS

(And who knows what's next!)

By Eve McClellan

Puka shells are all the rage, and there are lots of puka pockets to prove it. Elizabeth Taylor wears a string of pukas, and that's pretty fancy company for the beachworn behinders of long dead Conus specimens. Imagine the protoconch of lowly Conus rattus being escorted to a party by a 64 karat diamond?

Although we are sure it's just a fad, several huis* have formed to merchandise puka jewelry on the mainland. At last reports Tiffany's in New York had a display in its 5th Avenue window, the least expensive choker being $250.00.

On any day, and at any given time one can see men, women and children in mad pursuit of the elusive puka. Armed with buckets, coconut shells, beer cans . . . even paper sacks . . . they attack the beaches and inshore waters just before dawn, and continue the search throughout the day . . . mostly on the north shores. Even Waikiki is not exempt, although the pickings are mighty slim there. I'm delighted with the entire operation. It leaves the water almost empty for swimming, snorkeling and collecting!

Hot on the heels of the puka craze came the foraminifera frenzy! These wafer thin and tiny tests are picked from the sand with tweezers and then strung to make necklaces. Being circular, and having a diameter of 4 to 5 mm, with a hole in the center, they resemble sequins . . . which is what they are called . . . sequin shells. It takes about 900 of these to make a necklace. They are quite attractive when worn, their tan to brown color being intensified when grouped together. On Waikiki sequin shell necklaces are marketing for $60.00 to $90.00.

What with the beaches filled with puka pickers and sequin seekers, I've had a ball studying the reef fauna and collecting. Just off one of our largest beach parks is a wide flat reef, beyond which the sundrenched surfers do their thing with gusto. The swimmers are shoreward in the lagoon, so the reef is free of human specimens . . except for an occasional octopus hunter. As far as I can figure, there are only two species of Octopoda on this reef . . . at least, that's all I have seen caught. Both are small, about two feet, including the tentacles. The locals call them he'e, and eat them with great relish. (Ed. note: They are delicious, too!)

* Puka is Hawaiian for Hole or opening, in this case, the hole formed by wave action in the protoconch of the genus Conus. The remainder of the shell is worn away, leaving only the spire with its hole.

Hui is Hawaiian for club, corporation or some other type of organization.

Editor, ERH

The above report is excerpt from an article appearing in DREDGINGS, Pacific Northwest Shell Club News, Vol. 14, No. 10, December 1974. Editor: Eleanor R. Hall.

PREDATION ON THE KEYS

Sandra Glazebrook
Key Colony Beach, Florida 33050

In September, 1973 I bought a live, 2½ inch (65 mm) high specimen of Fasciolaria tulipa (Linnaeus) from a diver who had taken it on a reef on the ocean side of Islamorada. I bought this particular Tulip because it was the beautiful orange-red form which Dr. Abbott reports is found only in the Lower Keys and Yucatán. Not only was the shell of my specimen orange-red, but the animal also had this attractive color, further ornamented with many small white spots. I kept it alive in a 2½ gallon tank for five months. I then unfortunately placed a specimen of the ordinary brown Fasciolaria tulipa in the same tank in the hope that they would mate and lay eggs. But this did not happen. Instead, the brown Fasciolaria, to my chagrin, made a meal of the handsome orange-red one.

While it was alive, the Fasciolaria ate 3 specimens of Melongena corona (Gmelin) form bicolor (Say) every ten days. This is the small form of King's Crown which is quite common here in the Florida Keys. I would put the Melongenas in the tank and the Fasciolaria would emerge from under the sand where he was hidden and eat the Melongenas one after the other. It did this by enveloping his victim in his large, muscular foot. It was impossible to see what happened next. But in a short time the predator would unwrap and leave the empty shell behind and go to work on another specimen.

In this case we see how one predatory snail, the Fasciolaria, ate up other predatory snails, the Melongenas, and finally got eaten himself by a fellow predator, another Fasciolaria. What a snail world! At least I still have the beautiful orange-red shell.

ARTICLES OF INTEREST

"The prosecution of the oyster shell burglaries case" describes the work of Dr. Melbourne Carriker with Urosalpinx cinerea, and his discovery of this oyster drill's methods of operation. The "burglaries case" is simply but accurately presented by writer Susan Schlee in SMITHSONIAN of November, 1972. The article is enhanced by Dr. Carriker's photographs of the mollusk in action.

The issue may still be available from the circulation offices of the magazine at 420 Lexington Avenue, New York, New York 10017.

* *

"Survivors from the Good Old, Old, Old Days. Some lessons for any species that wants to live forever." An interesting discussion of what it takes to rank as a living fossil (such as Neopilina, Neotrigonia, and Limulus), by Niles Eldredge in NATURAL HISTORY MAGAZINE of February, 1975. Available at the American Museum's bookstore.

ETYMOLOGICAL NOTE: "The chiton or tunic of the ancient Greeks got its name from the Semitic kuttoneth. Joseph's 'coat of many colors' was a kuttoneth."

M. Pei, THE STORY OF LANGUAGE, p. 227

NYSC NOTES NUMBER 211 APRIL 1975

NEW YORK SHELL CLUB INC.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MAY 11, 1975, at 2:00 P.M.

PROGRAM: HUNTING THE LUCIDELLA (with color slides)
Morris K. Jacobson

TRIP TO COSTA RICA (with color slides)
William Old Jr.

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"The immediate occasion for the outbreak of the Peasant's War was a disturbance in the territory of the Count of Lupfen...in 1524. The countess had antagonized the peasants during harvest by asking them to pick strawberries and snail shells."

From: Luther and His Times, by E.G. Schwiebert
Contributed by Milton Werner

Indeed, the diversity (of shells) is so great, and the figures and colours so very striking, that several persons, with a kind of harmless indolence, have made the arrangement of them the study and the business of their lives. ...A mind that can find innocent entertainment in these humble contemplations is well employed; and, as we say of children, is kept from doing mischief. Although there may be nobler occupations than that of considering the convolutions of a shell, yet there may be some who want the ambition to aspire after such arduous pursuits; there may be some unfit for them; there may be some who find their ambition fully gratified by the praise which the collectors of shells bestow upon each other. Indeed, for a day or two, there is no mind that a cabinet of shells cannot furnish with pleasing employment.

Oliver Goldsmith, A HISTORY OF THE EARTH AND ANIMATED NATURE
London 1774

Contributed by Ella Mazel

SEEN IN A CARTOON. Two snails after bumping and cracking shells. Says one: "Why don't you look where you're crawling?"

WHAT AND WHY TYPES?

Morris K. Jacobson

Some recent popular and semipopular books have shown that a certain amount of confusion exists in the minds of even "expert" amateurs regarding the nature and function of types of systematics. The following brief notes are based upon some personal experience with types and references to discussions of the subject in several texts like Schenk and McMasters (1948), Mayr (1969), and Richter (1948).

First, why a type? The answer is simple. When a student comes across what he is convinced is a new species of mollusk or other organism, he proceeds to make up a name and to write a description, using the clearest language he can. But this description, good as it often is, still is full of subjective observations and judgements. Statements like "suture well impressed", or "base evenly rounded", mean this is how the morphological characters appear to the author. Others may see them differently. Such statements can be the cause of confusion in recognizing the species later on. This parenthetically, explains partially why there are so many synonyms in existence, species which have been described more than once.

Now, to make sure that no shadow of doubt can remain about the identity of the new taxon (here meaning species), the author is asked to select a single specimen and thus objectively fix for all time the identity of the species. Anyone who wants to know finally what the new species really looks like, now merely has to examine this specimen. The specimen so selected is called the holotype (=whole-type). The Germans call this specimen a Namentraeger, a name bearer, because it is this objective specimen that bears the name, not a faulty, subjective description. Usually the holotype is only one specimen of a larger or smaller series which the author has collected or is examining. In such a case, all the other, non-holotype specimens of the series are called paratypes (along-types). Paratypes can also serve as "Namentraeger" -- except for one difficulty. It can happen that the author, without being aware of it, is including the shells of two different species in the series of shells he is describing. Thus it is possible -- it has happened -- that later students, using different paratypes, can come to different ideas about the characteristics of the new species. For this reason many students look upon paratypes with suspicion and do not regard them as "primary" (absolutely reliable) types. They often are called typoids, that is type-like, not real types.

But in former times authors did not bother to select types -- Rafinesque even ate the holotype of a new cephalopod he had described. They kept a few specimens of the newly described species and sent out others in exchange. Frequently, they changed the "type" in their collection years later when a better specimen came along. Such specimens, if they can be found, (and finding them is often a detective story in itself) are obviously important because we know that they were in the hands of the author when he wrote his description, or that at least he recognized them as belonging to his new species while he was describing it. These specimens are called syntypes (together-types) and from them a later student, monographing an entire group, selects a lectotype (selected type) which for all practical purposes -- provided the selection has been

done carefully -- carries the same weight as a holotype. All the former syntypes now become paralectotypes and function like real paratypes, suffering from the same disadvantage.

This is not yet the whole story. It sometimes happens in the course of natural catastrophes which the flesh is heir to, that the holotypes, lectotypes, and paratypes are all destroyed. What happens now? A new type-specimen, a new Namentraeger, must be found. This is called a neotype (new type) but the rules for selecting one are pretty strict. We realize that the neotype, which the author of the species has never seen, must conform absolutely to his original ideas. If a wrong selection is made, the entire concept of the species is distorted and altered, especially if it is not a common species. For this reason the International Commission on Zoological Nomenclature, the "Supreme Court" in the field of nomenclature, has set up very strict rules which can be found in the books I cited above.

Since types are the Namentraeger of the species, they are important even if the species whose "Namen" they "traeg" later turn out to be synonyms, or otherwise invalid. They are guarded in museums as zealously as their brother types of valid species, since they offer the final proof that a synonym was indeed involved.

There are other kinds of types which may be useful but are not important for the fixation of a species. These are omitted here.

FROM THE CORRESPONDENCE OF WILLIAM WEEKS

Edited by William Old Jr.

William H. Weeks (1870-1957), of Brooklyn, amassed an enormous collection of shells in his lifetime. He exchanged with individuals and institutions all over the world. Also, he used to write to school teachers in the Philippines and to missionaries in New Guinea and in the Solomon Islands for shells.

Some time ago, his son, Wellington Weeks, gave us several files of his father's old shell correspondence, from which the following paragraphs were gleaned.

Cotabato, Mindanao, Philippines '33

"I am forever telling my relatives to try to ask some of those people in the Mountains to collect snails. I should have sent you quite a lot, but the difficulty of collecting is that when they are alive they cling singly on leaves in the bushes or when in groups they stay under big stones. It is hard indeed to locate many when alive. But when a forest is burned you can find plenty of shells within the burned area, but of course many are spoiled."

Bulacan, Philippines Oct. 1934

"Forest snails are available in my place. They are found in the forest among the big stones, under the caves and in the gorges. If you need some I believe I can help you if you are willing to meet the expenses. I will hire two men to gather these snails within a week or more. Each man will receive ($.75) seventy-five cents a day. If you approve the plan, kindly notify me at once."

Vailala, Papua Feb. 1936

"I am posting you via Parcel Post, about 150 shells comprising four or five varieties. I hope they reach you in good condition, and that they are what you are requiring. I am sorry not to have replied sooner, but this is the first opportunity I have of mailing the shells. We some into Port Moresby only about twice a year.

"The collecting of the shells makes quite a story. I asked my small school boys and girls to bring me some, promising to give them something for the live snails. After school was dismissed, they all set off for the jungle, returning later with a few each, and then the buying commenced! Some wanted fish hooks, some line, others razor blades, and other odds and ends dear to the hearts of small black boys and girls. Strange to say the girls were the ones who wanted razor blades, as they like them to shave their heads, when the live stock get too numerous in their wooly hair!

"Then I had to lock up my purchases as the snails wanted to escape overnight."

Kieta, Bougainville Aug. 1937

"I received your letter a few weeks ago and thought to write just to say that I will endeavor to gather for you the desired specimens before the next steamer, which is another six weeks.

"I know there are some snails here but I can't say how many. I have mentioned it to the mission boys so I think I will be able to get you the varieties from this island.

"The boys laughed when I asked them to get me some snails and asked if I was going to make soup. I assured them that I was not."

Romblon, Philippines Nov. 21, 1941

(Written 1 month before the Japanese invasion)

"I will try once more to search among the groves in the forest, because I know you are in need of these snails. Just send me immediately the expenses for postage and my advance pay if possible. I'll send you the shells before the end of December. Just pray for my safety walking alone in the forest."

Palawan, Philippines Feb. 1947

"For curiosity, what scientific good has the snail shell contributed to the present age of civilization?"

Rossel Id., Samarai, Papua Jul. '51

"I have put off writing till I could get more shells to send you, but unfortunately the natives won't bother with them. I have quite a lot of other shells from the bush but Mother says you are not intestested in them. Also a few of the ones you want but they look dead and not worth bothering over.

"I see you mention pay for the shells I sent last time. Well there weren't very many and as you are still working at the age of 80 or 81 and I am only 24, I think I can let you have them for nothing. Please don't worry what it cost me, it wasn't very much, and I will send you more when I can get them."

A NOTE ON SHELL COLOR

Ricky Balides

About one year ago I received from my father a few single valves of Argopecten irradians (Lamarck, 1819) which I was told came from a scallop fisherman in Mattituck, Long Island. On one of the valves was a large lump. Prying the lump off, I found that it was a one inch specimen of Crepidula fornicata (Linnaeus, 1758) which had attached itself to the scallop, and when I touched it with my finger, I could feel a slight ribbing in the slipper shell too. This did not strike my interest as much as the fact that the Crepidula was similar in color to the scallop. A similar instance was seen in a specimen of slipper shell taken from the underside of a crab in Rocky Point, Long Island. The underside of the crab was whitish in color which was also the color of the Crepidula. Whether or not this is just a coincidence I do not know. One possibility is that this pigment is due to similar environmental conditions (salinity of water, similar diet, etc.). Another possibility is that these animals possess the ability to adapt their shell color to that of their background. Of course, if Crepidula does possess this ability, it would have to take place in the beginning of the animal's sessile life, since no mollusk can easily change the permanent colors of its shell.

Many people may find this idea rather far fetched, but it should interest them to know that many mollusks have colors similar to their backgrounds. For instance, many coral dwelling mollusks are white in color. Those found on kelp are often brown. On a Key Biscayne sandbar in Florida, I have observed Prunum apicinum (Menke, 1828) which were almost invisible on the sand.

It is, however, a shame to note that no matter how well hidden the shells are, they are still captured by the keen-eyed collector.

MOLLUSKS IN NOVELS

We don't suggest that you rush out and necessarily buy it right away, but it seems that one W. H. Canaway has written a novel called THE GLORY OF THE SEA (Bobbs-Merrill $5.95) dealing with --- yup, Conus gloria maris, as the Times prints it. According to the review in last Sunday's Times, "A round-the-world sailor named John Devon collects a live member of the species (lucky dog!) when he falls overboard from his Fiberglas raft and is washed up on a Micronesian atoll, snail in hand. Devon, a semipro poet, develops a mystical affinity for the mollusk, which he reinstates in a rock pool on the island." The story goes on from there. Sounds like it has possibilities.

MKJ

AUCTION OF SHELLS MAY 4TH

Nick Katsaras and Sol Weiss will hold an auction of shells on the first Sunday in May (May 4th) at the Broadway Dance Studio, 31-08 Broadway, Astoria, Queens. The studio will open at 11:30 AM for sales from the bargain table and inspection of the shells for auction. The auction will start promptly at 1:00 PM.

ADDITIONAL NOTES ON "COLLECTOR'S ENCYCLOPEDIA"

Earl H. Reed
Springfield Museum of Science

With reference to the "Collector's Encyclopedia of Shells," I noted with interest Bill Old's list of errata in NYSC NOTES 208, pp. 7-8. The book is useful, but I also was rather appalled at the number of errors. In addition to Bill's list, I've noted the following, some of which are admittedly matters of opinion:

Pp: 195-197 Illustrations (or captions) of Marginella loebbeckiana Wein. and M. ventricosa G. Fisch. are transposed.

P. 217 Illus. of Terebra dislocata Say and T. dussumieri Desh. are similarly transposed.

The following identifications are either doubtful or erroneous.

P. 59 Illus. of Echininus nodulosus Pfr. probably is Nodilittorina pyramidalis Q. & G.

P. 59 Illus. of Tectarius grandinatus Gmel. is T. coronatus Bal.

P. 81 Illus. of Strombus bulla Roed. probably is form of S. aurisdianae L.

P. 121 Illus. of Murex chrysostoma Sby. is atypical for that species, and is probably one of the forms of the species that Dr. Emily Vokes considers to be M. messorium Sby. (but which Tucker Abbott considers a form or subspecies of M. recurvirostris Sby.

P. 208 Conus mediterraneus Hwass should be C. ventricosus Gmel.

P. 250 Size of Tridacna gigas L. (12-13.5 cm) is understated, to say the least.

P. 102 Illus. of Lunatia heros Say. is L. lewisii Gld.

P. 125 Illus. of Chicoreus triqueter Born. is C. trigonulus Lam. (they are not the same species).

Finally, I disagree with the comments on the following:

P. 125 Hexaplex cichoreus Gmel. is, in my experience, an abundant species and not "uncommon."

P. 153 Strombina fusinoidea Dall is anything but "rare", and I have several hundred specimens to prove it!

A LETTER

Dear Morris:

How could you? In the last issue of the NOTES you said that the Collins machetes were made in Hartford. Never! They were manufactured in Collinsville, Connecticut, about 12 miles west of Hartford. They gained their maker a due measure of fame because they were so good so good they could be used to chop another machete maker's blades in half! Unfortunately the Collins factory closed down about 15 or 20 years ago because their product was too good to keep up the quality and still compete in the price market.

Watch your geography, please. There are enough pitfalls for editors, without things such as that.

Sincerely,

Don Kuntz

ED. NOTE: I don't care. That's what they told me in Cuba.

FROM THE MINUTES OF THE MARCH MEETING --

Discussion of preparations for the 1975 social meeting elicited two unprecedented, and welcome, additions. When home-baked cakes were mentioned, Anne Taxson cited women's lib and suggested that some men volunteer. Whereupon Ken Sanger volunteered the services of his son, David, as a cookie baker. President Frank Nelson, outlining a proposed timetable of events, somewhat grandly referred to a hiatus. Bob Janowsky immediately offered to donate one.

The meeting program featured S. Peter Dance, invited from England, and Phillip Clover, who dropped in unexpectedly from California. The combination provided a memorable afternoon for an audience of close to 100.

Mr. Dance, formerly of the British Museum and the National Museum of Wales, spoke on color and color patterns in shells. Illustrating his remarks with slides, he discussed his observations on the relative frequency or rarity of specific colors, color combinations and patterns. He noted, for example, that while there are many allwhite shells, there are comparatively few of any other solid color. He cited Cantharus, Phasianella and Turbo species that boast four or five different colors, but gives the laurel to Oliva miniacea, on which he recognizes six. He also mentioned a pianist who played the "music" he read from a Voluta musica, but unfortunately was unable to say what it sounded like.

It was happy chance that had Phil Clover in New York on our meeting day. Since he had with him pictures made during a collecting trip to Senegal, the business segment of the meeting was shortened to allow him to take us to collecting spots north and south of Dakar. His slides also included shell close-ups, scenery, and people -- and a dealer's outdoor "shop" where the selection is mouth-watering and the price ceiling is one dollar.

Milton Werner

ARTICLE OF THE MONTH

Adaptive design of locomotion and foot form in prosobranch gastropods is the subject of Dr. Susanne L. Miller's article in Journ. Exp. Mar. Biol. Ecol. 14: 99-156 (1974). It is shown that speed increases among species as the foot approaches or exceeds shell length and is highest if the foot is also broad; the greatest tenacities are attained by species with a long, broad foot whose dimensions do not exceed shell length. Gastropods inhabiting soft substrates move primarily by pedal cilia, or by discontinuous locomotion; a form of this latter type is leaping, which surpasses in speed all other methods of movement.

Henry Russell

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NEXT MEETING: SUNDAY, JUNE 8, 1975, at 2:00 P.M.

PROGRAM: SPECULATIONS ON SIRATUS
by Jerry Harasewych

THE TYPHINAE (with color slides)
by Robert Janowsky

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The 41st annual meeting of the American Malacological Union and the 8th annual meeting of the Western Society of Malacologists will be held jointly at San Diego State University, in San Diego, California,

For more information and registration, write to Mr. Clifton Martin, 324 Kennedy Lane, Oceanside, California 92054

NOTICE OF ELECTIONS -- At the next meeting of the New York Shell Club, the annual election of officers will take place. Any nominations may be submitted to Mrs. Dorothy Raeihle, at the address listed on the front cover of these Notes.

REVIEW -- "The Archeological Use and Distribution of Mollusca in the Maya Lowlands" 1969, by E. Wyllys Andrews IV
Publication 34, Middle American Research Institute, Tulane University, New Orleans 1969. 115 pages, 6 text figs., 21 plates $8.00

This work is a wonderful example of how molluscan shells are of great importance in archeological research. Workers interested in the molluscan fauna of Yucatan as well as those interested in the fascinating Mayan anthropology of Yucatan and the introduction of several Pacific species will find this publication indispensable. An excellent, scholarly work.

M. Hulswit

SOME MALACOLOGISTS OF THE NEW YORK AREA

Mathilde P. Weingartner

EDITORIAL NOTE: This paper was presented at the 21st annual convention of the American Malacological Union in July 1955 at Wagner College on Staten Island. A slightly revised version was printed in Nautilus 69, pp. 48-53.

During the latter part of the 19th Century and the early part of the 20th there appear in the annals of malacological history, a few names of men that lived or worked in the New York area that might be worth investigating. These men, like many of us, led very interesting lives, not only because of the hobby they pursued, but because of the people that this hobby brought together. These men may have had demanding jobs in the economic struggles during their lifetime, but either as a diversion or as long delayed hobby in their older years, they took up natural history in earnest. These men, most of whom were well aquainted with each other, spent a great deal of their time in the field. They collected extensively, exchanged notes on their collections and enriched more than one museum with their finds. Here, after considerable amount of research, I offer glimpses into their very interesting lives.

TEMPLE PRIME was born at 1 Battery Place, N. Y. on September 14, 1832, the son of Rufus Prime. He was educated abroad, and upon his return took a course in Harvard Law School. He was for some years connected with the U. S. Legation at THE HAGUE, while August Belmont was minister there. When this service ceased, he returned home, and as he had ample fortune, he never entered upon the practice of his profession, but spent his time managing his large estate at Huntington, L. I. He spent quite some time writing a genealogy of the Temple Family, which apparently stemmed from English nobility. I have an example of this work here. In conjunction with Sanderson Smith he wrote "A REPORT ON THE MOLLUSCA OF LONG ISLAND" published in the ANNALS OF THE LYCEUM OF NATURAL SCIENCE, Vol 9, June 1870. We also have in our library his "NOTES ON THE SPECIES OF THE FAMILY CORBICULIDAE, WITH FIGURES". All the species written up in this paper were apparently collected by himself, many in far off places. With this work is also a CATALOGUE OF THE SPECIES CORBICULIDAE. I am sure that this work is not the only one Mr. Prime wrote and I hope some day to see some others of his works.

SILAS CARMI WHEAT was born in Franklin, N. Y. on December 11, 1852. He was educated in the Delaware Library Institute, graduated in 1876. After many years of teaching, he received from New York University in 1898 the degree of Master of Pedagogy. From 1894 until his death he was a resident of Brooklyn. In 1910 he became president of the New York Men's Teacher's Association. The impetus of his strength is still felt in New York educational circles today. But for his work as a scientist he will perhaps be most widely recognized and longest remembered. He wrote many articles on nature topics. He was a long honored member of the Conchological Society of Great Britain and Ireland, and through his writings in this field he became well known as a scientist. For the State Museum in Trenton, N. J. he prepared a REPORT OF THE MOLLUSKS OF NEW JERSEY, and for the Brooklyn Institute

of Arts and Sciences he wrote a similar REPORT ON THE MOLLUSKS ON LONG ISLAND. He also wrote a genealogy of the Wheat Family. He was an honored member of the Brooklyn Entomological Club, as well as the Brooklyn Conchological Club. He died suddenly on September 1, 1922.

A contemporary of the previous two gentlemen was LOUIS POPE GRATACAP. He was born in Brooklyn on November 1, 1851, son of John L. and Lucinda Gratacap. He was graduated from the College of the City of New York in 1869, and from Columbia College school of Mines in 1876. The family had moved to Bement Avenue on Staten Island many years before and it was from this address that he attended college, a tedious journey in the days of slow ferries and horse cars. He was connected with the American Museum of Natural History from 1876 on and became curator of mineralogy in 1881. With one assistant, Mr. Quinn, he not only kept the great collections of this museum, both minerals and shells, in apple pie order, but he found time to give the displays artistic settings, and his writings were of a varied character. Among several hundred papers were 3 on museums, a guide to mineral collections, three editions of the GEOLOGY OF NEW YORK, A TRIP AROUND ICELAND, ANALYTICS OF A BELIEF IN A FUTURE STATE, PROTECTION OF REASONABLE DOCTRINE, THE SUBSTANCE OF LITERATURE, and about half a dozen novels. From 1878 to 1881 he was a chemist for the Metropolitan Gas Co. As a lecturer he had few equals, not only with original and entertaining ideas, but these were presented by the medium of a remarkable vocabulary. He never cared to go into public life, but lived quietly with his brother. He had a great many friends and was always helpful to them both with kindly acts and financial aid. In 1881 he became a member of the Natural Science Association of Staten Island and from 1887 to 1888 he was president of that organization. From 1884 to 1901 he contributed 24 papers to the proceedings of this institution, among them a MEMORANDUM ON LYMNEA PALUSTRIS. In this paper he described an experiment he carried on with these snails, maintaining them in very cold water over winter. He found them not only surviving but breeding the following spring. He disputed the fact, stated by other authors of the times, that the species do not survive as snails over winter, but hatch from eggs in the spring. His busy life ended in December 1917 and he is buried in the family vault in the church yard of Trinity Church, Manhattan.

TO BE CONTINUED

SHELL AUCTION. June 1, 1975 at the Broadway Dance Studio, 31-08 Broadway, Astoria, Queens, N. Y. C. Shells from the collection of the late George Jacobs.

1975 Supplement to AMERICAN MALACOLOGISTS -- 300 additional biographies of living and deceased amateur conchologists and professional malacologists appear in the new 1975, 100-page, supplement to the very informative and useful AMERICAN MALACOLOGISTS. The latest address changes are given for the 1,000 biographees listed in the first edition. Numerous amateur shell collectors, many of whom are willing to correspond or exchange are listed. The supplement sells for $2.00. There is a paperback edition now available for only $4.95. Send check for both or either to "American Malacologists", Box 4208, Greenville, Del. 19807.

DISCORD IN PARADISE IV

Morris K. Jacobson

Much discord is aroused, even if it does not always appear in print, when a colleague criticises a writer's work with undue severity. This happened frequently in the past and was often expressed in terms of wounding irony: "The late (S.P.) Woodward, who seems to have been disturbed at the rapid progress that the knowledge of the animals and shells are making in this country, published his Manual (of the Mollusca, 1851-56)...trying to stem the current...I think that the faith (students) place in Woodward's Manual is one of the causes of their want of progress." (Thomas Gray, Am. Jour. Conch. 4:208). "The Nürnberg periodical here referred to is fortunately but little known to conchologists, the letter press being merely the reproduction of a mass of errors and confusions." (Lovell Reeve on Küster, Conch. Icon. 2:151). "Any future studies can only subtract from such imposing creations, which included, as new, 5 genera, 23 subgenera, 101 species, and 120 subspecies, from one of the best known islands." (H. B. Baker on Torre and Bartsch, Naut. 55:43). "The literature of these groups (Rissoidae) has been so overloaded with Arthur Adams' descriptions which do not describe, that intelligent work upon the Japanese forms is impossible. The literature of descriptive zoology furnishes but few instances of work more superficial and worthless than that of this industrious dilettante." (Stearns and Pilsbry, Mar. Mol. Japan, 1895, p.111). Sometimes a critic speaks more gently. "Mr. Charles Maynard was one of the old school of naturalists and had his own ideas regarding nomenclature and classification of species." (C. W. Johnson, Naut. 43:101). Examples could be multiplied if space permitted.

One riled author struck back at his carping critic, and this led to a brief but lively duel. After a certain E. R. S. (probably E. R. Sykes, 1867-1954) had been taking pot shots at Pilsbry for his continuation of Tryon's MANUAL OF CONCHOLOGY, the annoyed author expressed his displeasure as follows: "E. R. S. seems to act on the theory that original views (except in so far as these are expressed in new names -- a very different thing from new ideas) are not worth space, which is given up largely to the correction of supposed 'slips' and 'printer's errors.' Even these would be of use were they well-founded, but to attempt corrections without being familiar with subjects treated is dangerous, and should not be lightly assayed. 'Don't monkey with the buzz saw,' as the sign reads in a Western saw-mill..." (Jour. Mal. 3:74). The same number of the periodical contains the rejoinder of E. R. S. "It is a popular superstition with authors that critics who do not agree with them are incompetent, and Mr. Pilsbry is no exception to the general rule. He complains that I do not refer to his 'new or original views;' if, however, I consider that there are none in a particular work, I cannot mention them. As to what constitutes 'original views,' each critic must form his own opinion. A review such as he seems to desire would take up more space than can be spared. Mr. Pilsbry must remember that saying I am not familiar with the subject, does not prove that he is. 'No case, abuse your adversary' is a good old saying." This belaboring one another with popular sayings seems to have been rather popular among older malacological disputants.

But Pilsbry was not only able to take it. He could also dish it out -- vigorously. One example was the treatment he meted out to Harold Hannibal for the SYNOPSIS OF THE RECENT AND TERTIARY FRESHWATER MOLLUSCS OF THE CALIFORNIAN PROVINCE (1912, Proc. Mal. Soc. 10: 112-211). It was apparently brought on by Hannibal's overstrong lumping propensities. He reduced all the Pleuroceridae of the United States (no one yet can tell us how many there really are) to 9 species in 3 genera, and listed 90 synonyms for P. canaliculatum Say and 3 solid pages of synonyms for Ambloxus (=Goniobasis) virginicum Gmelin. Pilsbry fired right from the hip, both barrels: "The Malacological Society of London has given variety to the last number of the Proceedings by adding a department of humorous fiction. In it they print a farce entitled SYNOPSIS etc." Then, after sardonically listing all of Hannibal's real -- and probably some fancied faults, Pilsbry adds: "Synonymy can be made by glancing over a few books; classification by drawing the names out of a hat after they have been well shaken up. The study of variation and inheritance may be left to old fogies who want to know what really happens under known conditions." Then comes the final block-buster: "We fear the Malacological Society has started out too well in its department of humorous conchology. Merely ignorant or wrong-headed articles they may possibly get, but where such another contribution to the gayety of nations as this?" Whew! (Naut. 26:71).

It must be noted that Hannibal never wrote another paper in his life. The story is that he never recovered his mental balance. His conclusions were in all likelihood quite erroneous, but surely there are gentler ways of showing a person that one disagrees with him. It is comforting, finally, to speculate that nowadays no writer on zoology would permit himself language like this -- or would he?

SHELL STORY OF THE MONTH

Marian S. Hubbard

This tale starts out like a fish story, on board a fishing boat off the east coast of Florida. My friend, Adelaide Kalvoort, was fishing just off the sea bottom near the edge of the Gulf Stream. The boat was about 25 miles from shore, east of an area between Ft. Pierce and Vero Beach. Several fish had been caught by other members of the party, and Adelaide cast out again. She felt her hook touch bottom and reeled it in a little. Then she felt the strangest action on her line. There was a quick series of three or four jerks, a pause, another series of jerks, a pause, and still another series of jerks. She reeled in and landed a lovely orange Lyropecten nodosus (lion's paw), very much alive, with the fish hook firmly in its flesh. Adelaide knew what she had, and was delighted because she knew how rare a find it was. It measured about 2-1/2" across and showed the effects of a hard life. There were very few ridges over the knobs, and a few of the knobs were broken. But it was a rich orange color, and was the first pair she had collected herself. I did not know this story when I mentioned to her that I had only a single valve of lion's paw, and she gave me the pair! I don't think I could have given away such a catch.

It sounds like a conchological fish story, but it is true: a lion's paw scallop can be caught on a hook and line!

UMBRAGE IN ACADEME

For the inspiration that led to the discovery of the tidbit of academic lore that follows, the researcher (and the world) are indebted to Mr. Morris K. Jacobson. His historical series, "Discord in Paradise," appearing in these pages, has brought to light a superlatively fascinating aspect of the "soft science." In the interest of recovering from the dark, unfathomed caves of the literary benthos every gem of scholarly skirmishing, he generously consented to duplication of his exploratory efforts. The first (and, undoubtedly, last) result was the salvaging of this record of an inter-colleague-ian imbroglio:

The initial affront was inflicted in "Jacksonia," the occasional paper of the Wapping Old Stairs (Great Britain) Repository of Scientific Curios. It was in an addendum to an eyewitness account (XCII:3, 1834), by Sir Sessile Post-Naisyl, senior malacologist at the Repository, of the tragic death of a pearl diver in the "corrugated jaws" of a Tridacna gigas. ("Suddenly the monstrous, living trap snapped shut, imprisoning and crushing the luckless beggar's left ankle." Etc.) Having thus captured the ear of the malacological world, Sir Sessile took the opportunity to append his estimate of an article that had recently crossed his desk. The work of Dr. Hermes "Streak" Nackttush, it appeared in "Pinna and Sepia," the intermittent journal of the Carpathian Undersea Biotic Observatory and Academy of Thallasography, where he held the Cunard Chair of Research and Salvage. (Carpathia is now known as Berengaria.) The article (XL:6, 1827) recounted preliminary investigations into the question of whether the Pectinidae mate for life.

His Lordship denounced the work as "vacuous voyeurism" and branded Nackttush a "moral mummy," in part for having employed boys in their innocent years as observers. "My own observations - quite incidental to my serious investigations -" he asseverated, "have exposed the Pectinidae as shameless sea-bed hoppers, and the less said about their private lives, the better for society."

In the due course of interchange of learned writings, this fulmination came to Nackttush's attention around 1840. In his fever to riposte he bypassed the UBOAT journal for a launching site closer to his target, no less a publication than "Melancholia," of the Flapping Old Spats Scientific Institute and Laboratories.

Titling his countercharge "A Kibitzer Should Talk, Already" (LXV:4, 1845) he lampooned Post-Naisyl's "incidental observations and conclusions" as "insidious obscurations and confusions," and ridiculed his prissy tone as "the simpering of a regular Polly Adler." (English was his second language, by several lengths.) In defense of his own work, he predicted that his findings would one day undergird scallop-culture methods that would put pearls within every woman's reach. Then, calling Sir Sessile "as scientific as an Eskimo electrician," Nackttush urged him to bury his head in the dust on his laboratory bench. "Plus," he grace-noted, "his father is a scullery Romeo."

Post-Naisyl, likewise stung into haste, lashed back in 1847, in "Molluscan Morphology and Hippic Form," the scientific and performance

periodical of the Hopping Up Stairs Tidewater Lyceum of Empiricism. Concerning Nackttush's vision of the future he pontificated (XV:62), "Scallops, like all organisms, reproduce at their own pleasure, and no muddleheaded meddler is going to revolutionize the pearl industry by diddling with their ids." Taking up the gratuitous slur on his progenitor he speculated, "If the Pearl King would spend more time on the shells that indulgent associates send to him, and less on the newspapers they are wrapped in, his work might acquire a tinge of professionalism. One hopes his ardor for obloquy will henceforth be tempered by the knowledge that the pater was recently called to The Big Habitat. And to deny him the titillation of discovering it in some crumpled scandal-sheet, the butler did it."

Nackttush was again preparing to cross swords when he instead crossed Styx. An unfinished screed on "the fussing and fumigating of the Sveetheart (sic) of Stigmatize," more precisely identified as "that hyphenated hairshirt," was among the few items preserved by the consultant - a dealer in "previously owned paper" - given charge of the good doctor's literary estate. The irony of his fate was alertly noted by "Intra-Specific Mollusca," the spasmodic paper of the Gryping At Splitting Bathypelagic Acquisitions Grotto. He expired in his laboratory, "suffocated by reason of massive dust inhalation." (II:32, 1850)

Lord Post-Naisyl was not long in following his late adversary to The Happy Collecting Ground. The only conchological publication that hinted at the circumstances of his demise was "Shell Pieces," the monthly bulletin of the Battersea Shell Fragment Club. The account (XCI:4, 1851) bespeaks yet another contortion of destiny. Sir Sessile was found lifeless in the below-stairs area of his ancestral home, "drilled near the umbo." The butler did it.

Milton Werner

FROM THE MINUTES OF THE APRIL MEETING

This was the Club's 10th annual social meeting, and it was held, as in the past, at Dorothy Jensen's Broadway Dance Studio, in Astoria, Queens. The first of the day's events was a showing of slides selected by George Raeihle from his voluminous files. The first of themes he had chosen was "The Search," a series of unposed tableaus in which George had caught Club members in a variety of the interesting postures assumed by collectors in hot pursuit. These were followed by photographs of cartoons relating to shells, and lastly by a number of outstanding sunsets. Drawings for raffle prizes made two people very happy, one with a copy of "The Collector's Encyclopedia of Shells," by P. Dance, and another with a copy of "Shells," by Emerson & Feininger. The door prize was another fine book -- "Les Coquillages."

The annual shell auction, again conducted by Bill Old, assisted by Sol Weiss, offered shellcraft, literature, and an extensive selection of specimens. Among the outstanding ones were Murex bednalli, Lyria kurodai, Xenophora pallidula, and Cypraea mus. The sale table, under Harold Feinberg, also offered an impressive quantity of shells, generously donated by members and friends. Socializing began with a cocktail and fruit-punch hour, followed by an excellent buffet supper.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, SEPTEMBER 14, 1975, at 2:00 P. M.

PROGRAM: TO BE ANNOUNCED

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The 17th edition of the Shell Desk Diary for 1976 is now offered for sale for $3.00. Orders should be sent to -- Shell Oil Company, One Shell Plaza, Houston, Texas 77002, Room 1536. No orders will be accepted after July 15, 1975.

But our houses shape themselves palpably on our inner and outer natures. See a householder breaking up and you will be sure of it. There is a shell-fish which builds all manner of smaller shells into the walls of its own. A house is never a home until we have crusted it with the spoils of a hundred lives besides those of our own past. See what these are and you can tell what the occupant is.

Oliver Wendell Holmes, THE AUTOCRAT OF THE BREAKFAST TABLE

OYSTER FABLE -- A sweet young female oyster (oysterette?) was coming back from her very first date. She was telling her eager friends how wonderful it had all been and how her handsome date had looked soulfully into her eyes as he told her how very much he loved her. Suddenly she clutched her throat in a panic and screamed, "My God! my pearls!"

SOME MALACOLOGISTS OF THE NEW YORK AREA PART II

Mathilde P. Weingartner

Another Staten Islander who gained fame in the malacological world was SANDERSON SMITH. He was born in London, England in 1832 and died in Port Richmond, Staten Island 1915. I have not been able to find out anything of his early life nor his education, but he is well known for his work with the U. S. FISH COMMISSION. From 1881 to 1893 Mr. Smith was especially engaged by the American Museum of Natural History to catalogue, label and arrange the shell collections under professor R. P. Whitfield. He made a number of contributions to the PROCEEDINGS of the NATURAL SCIENCE ASSOCIATION OF STATEN ISLAND, of which he was elected first president in 1881. Among these papers were: NOTES OF THE MOLLUSCA OF STATEN ISLAND, CATALOGUE OF MOLLUSCA OF STATEN ISLAND, NOTE ON THE DISTRIBUTION OF LITTORINA LITTOREA, NOTE ON LIMAX MAXIMUS, and NOTES ON THE SHELLS OF THE JOHN J. CROOKE COLLECTION. Of greatest interest to us of course are the CATALOGUE OF MOLLUSCA OF STATEN ISLAND read before the NEW YORK LYCEUM OF NATURAL SCIENCE, and later published in the ANNALS (1867) under the combined names of Sanderson Smith and J. W. Hubbard. In this same issue appears a CATALOGUE OF THE MOLLUSCA OF LITTLE GULL ISLAND, SUFFOLK COUNTY, N. Y. Mr. Smith's earliest paper is ON THE MOLLUSCA OF PECONIC AND GARDINER BAYS, LONG ISLAND, read before the Lyceum on December 5, 1859 and printed in the Annals in 1862.

Mr. EBER WARD HUBBARD, according to Long and Davis, was born October 8th, 1797 in Jefferson County, N. Y. He practiced medicine in La Grange and Elmyra Ohio, before he settled in Tottenville, Staten Island. He died May 7th, 1872. As an avocation, he studied shells and with Sanderson Smith published that first CATALOGUE OF STATEN ISLAND MOLLUSCA in 1865, which appeared in the ANNALS OF THE LYCEUM. In this report his name is erroneously given as J. W. HUBBARD. I have not been able to find out anything more about Mr. Hubbard, except that one of our oldest members says that he and Mr. Smith used to be referred to by members of the Natural Science Association as the "Old Man".

JOHN J. CROOKE, another one of our Staten Island naturalists and collectors was born in Columbia County N. Y. in 1824. He came to Staten Island and purchased a large tract of land on the south shore of the island, where he built his house. This point of land, for many years bore his name, Crooke's Point, until the New York City Dept. of Parks took over the area and called it Great Kills Marine Park. Mr. Crooke purchased and collected numerous natural history objects, including plants and shells, which later found resting places in museums and libraries. Sanderson Smith was given the job of going over the shell collection which Mr. Crooke had accumulated, but did not find anything new to add to the list of Staten Island Shells. Mr. Crooke's collection consisted mainly of land shells, and as such was very good and complete. He not only had a lot of local material, but a large part of a collection of shells from the West Indies and South America, assembled by Thomas Bland and a collection of shells from the Pacific by Mr. Pease. Mr. Crooke does not seem to have interested himself much in marine shells, as his collection of such was a very small one. All of Mr. Crooke's collection of shells was presented to the American Museum of Natural History.

Since this report was gotten up by a member of the Staten Island Museum of course we can't forget one of its illustrious founders and a student of most of these other gentlemen, WILLIAM THOMPSON DAVIS. "One Davis" as he liked to call himself was born in 1862 into an old Staten Island family, the Thompsons, and an equally fine New England family, the Davises of Freetown, Massachusetts. He grew up with his mother's people, and his only formal education were two Staten Island private schools. From early childhood he was interested in flowers, plants, insects, mammals and any other natural phenomonon. From 1883 to 1909 he worked faithfully at a job of a book-keeping nature for the N. Y. Produce Exchange. Being of a frugal nature, he accumulated a small sum, which, wisely invested, brought back a comfortable living, so that he could devote himself to his hobbies from 1909 on. Having always gone afield and collected natural objects, of course he did not neglect shells. Among other specimens, carefully put away in boxes, shirt boxes, or vials, was a *Mya arenaria*, from whose grip he had released a hapless sandpiper. A vial, containing 2 *Crepidula fornicata*, was labeled that the shells were collected from the shell of a horseshoe crab. Thus all his specimens were carefully labeled, except that the location given may be rather vague, such as "Asbury Park". Mr. Davis was always conservation minded and afraid that someone else might collect in the area to excess. Mr. Davis carried on a lively correspondence with many naturalists and of course conchologists like Silas Wheat etc. were no exception. In the Proceedings of the S. I. Institute, he also wrote about the first occurrance of *Littorina littorea* on S. I., this being a milestone in the migration of this mollusk along the Atlantic Coast. "Willie Davis" or "Uncle Billie" as he was affectionally called will long be remembered by his friends, of whom he made many in his 82 years of nature rambling.

GOSH-I-NEVER-KNEW-THAT-BEFORE DEPARTMENT

"You will find abundant positive evidence of its (Scaphopod) presence in the vicinity if you walk the beaches and scan the sand between tidemarks. It is called the Common Tooth Shell (*Dentalium entale*) and somewhere along the sand you will see the empty limestone dwellings of such former tenants in the shape of narrowly conical and slightly curved two-inch shells that much resemble the hollow white fangs of a venomous serpent. There are plenty of such shells along our beaches and you can't miss them if you make even a casual search." JohnKieran NATURAL HISTORY OF NEW YORK CITY, 1959, p. 57. Ed. note: I walked the beaches of New York City since 1938 and never found even one fragment of a specimen. Many other people have had the same, if not quite so lengthy, experiences. Maybe our searching wasn't "casual" enough.

Title of the lead article in a recent issue of a shell club periodical: PARTIAL LIST OF THE ERRATA IN B. F. KENSLEY'S BOOD "SEA-SHELLS OF SOUTHERN AFRICA." Thank heavens that we in the N. Y. S. C. Notes never make such misteaks.

UNUSUAL COLLECTING IN HAMPTON, VIRGINIA

Wylda M. Stephens

When Mr. Stephens was transferred from Key West, Florida to Virginia Beach, Va. some years ago, we felt the bottom had fallen out of shelling for the duration of our tour of duty. This only shows what a surprise was in store for us.

No, we weren't wrong about finding live shells from this area, either for our collection, or for future exchanges. There were almost no live shells to find, and none that were particularly desirable. Or so we thought for 16 months. However, after hearing from several sources about a certain area called Rice's Pit in Hampton, Va. where fossil shells from the Miocene (approximately sixteen million years old) were quite plentiful, we decided that finding old, dead shells was preferable to finding none at all.

Well! This opened a whole new world for us. The first few times we spent finding the soft places and getting ... (hip?) deep in mud, and generally learning by experience not only how to keep out of said mud, but how to look for fossils, how best to dig them out; and which were the most likely places to find the most perfect specimens. This included crawling on hands and knees to find elusive but desirable small species such as *Epitonium*, *Dentalium*, etc. You can only imagine the experience of discovering our first really perfect *Ecphora quadricostata* Say, which is referred to as an "Index" fossil of the Miocene. Next, the thrill of finding our first good *Aurinia mutabilis* Conrad. Both were supposed to be quite rare. The fascinating feature about these particular specimens of *Aurinia* is the fact that many have the glaze and markings intact. My major find was a perfect specimen that looks as though it had been dredged live only yesterday. Not a chip out of the lip, and the appearance of having been dipped in shellac! We have several other specimens (they all average between two and four inches long) nearly as perfect, and they make quite an impressive display, especially with the eleven-inch specimen my husband found. It is a grayish color and was found quite deep. Evidently it is much older than the others, as even the composition seems different. Mr. Stephens was so excited and nervous that it took both of us almost an hour to dig it out of the solid bank, even though the soil was wet.

Our choice finds were the delicate *Scaphella solitaria* Conrad, no more than one inch long, but still clearly marked with yellowish orange spots; the beautifully webbed winged murex, *Murex umbrifer* Conrad (even rarer than the *Scaphella*); *Conus adversarius* Conrad (a rare species in the Miocene of Virginia, although not uncommon in the Pliocene of Florida where it is *Conus adversarius tryoni* Heilprin, the famous left-handed or sinistral cone; and the very rare *Sconsia hodgei* Conrad. Also present were one or more species of each of the following genera: *Oliva*, *Pecten*, *Arca*, *Cardium*, *Venus*, *Epitonium*, *Calliostoma*, *Fusinus*, *Turritella*, *Terebra*, *Drillia*, *Ptychosalpinx*, *Urosalpinx*, *Eupleura*, *Marginella*, *Busycon*, *Panope*, *Crepidula*, *Crucibulum*, *Diodora*, *Ostraea*, *Plicatula*, *Dentalium*, *Cancellaria*, *Coralliophila*, *Dosinia*, and *Architectonica*. There were other genera represented, of course, but I have tried to account for the best known. We particularly noted that we found no representatives of *Cypraea*, *Strombus*, *Astraea*, *Turbo* and

Cymatium, to name the commonest groups which were conspicuously absent. With few exceptions we were able to find the Pelecypoda (bivalves) with both valves intact. Another of the wonders was that the glaze and patterns were still descernible on many of the Conus marylandus Oliva, Sconsia, and the high natural polish still on the Marginella.

When our fondest dreams came true and we were transferred back to Key West, while Mr. Stephens headed for the water and skin-diving for live shells, you could find me high-tailing it in the opposite direction, in search of more very old, very dead shells, this time for Pliocene fossils from the Caloosahatchee formation.

SELF-GUIDED FIELD TRIP

Warren Redford

Why not take a "self-guided field trip to Rice's Pit? It is open week-days 9:30 A.M. to 5:30 P.M. and Sundays 2 to 6 P.M. For individuals the fee is 75 cents per hour (groups can obtain special rates). (Directions -- from a map accompanying the article: The Pit is at number 29 Harris Creek Road, leading off from Fox Hill Rd. (Va. route 167) northeastward from US 258 from King (Va. route 278). Or write to the author: Wylda M. Stephens, 568 Longfellow Ave., Virginia Beach, Va. 23462)

excerpted from THE LAMIT, vol. 5, no. 4, organ of the GEM AND MINERAL ASSOCIATION of Norfolk, Va.

DAN STEGER

We were greatly saddened to hear the news that Dan Steger died on May 16 at his home in Tampa, Florida. Every shell collector really interested in the shells of Florida and the Caribbean came across the name of this skillful and devoted collector. Much of his material was procured by personally financed dredging trips. He supplied many new species to scientists and several rare ones bear his name. With his customary generosity he enriched the collections of many shell lovers as well as important university and museum collections. His own collection, housed in magnificient, absolutely dust-free cabinets built by Dan himself. still contains many rarities in perfect condition. His love of shells led him to become an expert photographer and many of his illustrations can be found in numerous popular and scientific publications. His sudden passing is a blow to all of us.

FROM THE MINUTES OF THE MAY MEETING --

The Shell-of-the-Month, presented by Karl Jacobson, was Lucidella tantilla. This very small land snail, a helecinid, is found on several of Florida's keys. On a trip to the appropriate section of the Keys, Karl expected to collect Lucidella alive, for the first time.

Despite considerable effort, over a period of weeks, he found only frustration. As a last, desperate effort, he gathered some soil from the quarry on Plantation Key, and sifted through it when he got home. Frustration was mounting again, when he found, in the last two handfuls, two dead specimens. Karl apologized for not ending his showing of photos of the quarry and other searching areas with a sunset, but he suggested that everyone close his eyes and imagine one of George Raeihle's.

In the main presentation of the day, Bill Old described two collecting trips, and preceded his remarks with a showing of several fascinating slide photos, made by Robert Lipe of Florida, of living mollusks. The first of the trips was one of those conducted by Kirk Anders, also of Florida. It touched on both coasts of Costa Rica. Bill showed pictures of scenery and of collecting areas covered by the jaunt. He then showed slides made when he and Harold Feinberg collected on St. Catherine's Island, Ga., which is owned by the American Museum, and used as a nature preserve and field study station. They did land, fresh water and marine collecting. Bill thoughtfully ended both series of photos with sunset pictures.

Milton Werner

PIGGY BACK SNAILS

Recently a friend mailed us a delightful newspaper picture of a small snail riding piggy-back on the top of a huge snail which looks like a specimen of the harmful giant African snail, Achatina fulica. The following humorous dialogue appears as the caption: "Taxi!... Where to buddy?... Oh, drop me off six inches away... Okay, pal -- but since it's so close, why didn't ya just crawl?... Because I'm so small and slow that it takes forever to get some place on my own... Well, sit back and relax, buddy ... with a little more speed we oughta be there in an hour."

Unfortunately, the actual scene may not be as idyllic as it seems. The small snail, about one fifth the size of the giant, may well be (the picture here is unclear) a specimen of the predatory genus Gonaxis which was imported into lands invaded by the Achatina to control this agricultural pest.* "Control" here is a synonym for to murder and devour. Achatina is a plant eater, Gonaxis is a flesh eater feeding preferably on other snails. Hence this cute little news picture does not show an adorable little fellow hitching a ride for fun, but a determined little murderer slyly preparing to slaughter his victim. Nature red in tooth and claw -- and radula!

MAJ

*see A. R. Mead, The Giant African Snail, 1961, pp. 130 ff

ARTICLE OF THE MONTH

Jonathan Haufler and Mattheu Robus have investigated the relationship between the three species of sea ducks, common, surf, and white-winged scoters, their food, razor clams, and the red tide outbreak that affected the New England coast in the Fall of 1972. The dinoflagellates

causing the red tide were ingested by the clams causing a buildup of a powerful toxin in them that caused a serious die-off in the ducks as they arrived here from their breeding grounds and fed on the razor clams. This subject is discussed in their article -- "The red tide and scoter mortality" in the New Hampshire Audubon Quarterly 26: 116-110 119, Fall, 1973.

Henry Russell

EXTRACTS FROM A CUBAN DIARY III

Morris K. Jacobson

Tues., July 20, 1948. Took the train to Mayajigua (Las Villas Province). Kids selling lottery tickets at station use high pressure methods. I cave in and let them sell me number 3044. Number 3054 wins. Because I came so close, they gave me a consolation prize. I was permitted to keep my ticket. (Cuban joke). See lizard running across water. Name of store is El Reposo. Feel very depressed, hate idea of having to sleep out as Alcalde tells me we'd have to do. (Turned out we never did). Vow: I won't come back, from now on easy collecting only. (I did come back and collected very hard). Stand of unusually high Royal palms near station. Station wagon takes us to Finca Alunado. An elegant finca, so live Cuba's rich people. At end of day arrive at baths at Los Baños de San José del Lago. Clean, pretty. Dona Rosa arrives in a plane from Havana, owner of the finca, a real duenna. Mayajigua is old, typical Cuban small town, not as good as Yaguajay, but not much worse. Thick heavy clayey mud sticks like glue to boots. Many rice fields. Armed soldiers on every train. Clicking noise of grasshoppers like dropping of liquid into a high necked jar. Mournful call of pigeons heard all day. A pleasure to cut down spiny chichicates, they part so easily.

Station 11. Finca Alunado. Difficult climbing, beautiful view of land and sea from hilltop. Dine luxuriously on country cheese (queso criollo) and prune juice and water in a lovely dale cut by a mountain stream. Collecting poor: Centralia, Torrecoptis, Opisthosiphon. Many live but very small Liguus.

Station 12. Cafetal de la Mercédez. Many Chondropomorus on trees in living fence, best collecting of day. (Branches of trees cut off and stuck into the ground, root and grow and soon form a living fence).

Station 13. Los Baños de San José del Lago. Hard work, poor collecting. Best was in a banana plantation where a man lay sick "con tumor."

July 15, 1948. Station 14. Chorrerón. After long walk through very muddy terrain. Poor haul of annulariids on sides of a gully (cañada) in small rock outcrops.

Station 15. Las Llanadas. Up the side of a hill along very hard cow path. Angry at such difficult travelling for such poor collecting. Yesterday met Señor Picado, old, toothless, bald. Went collecting with his son Cirio Picado. Jiquí is hard wood of which telephone poles are made. Great lasting qualities. Peasants slide the fruit bunches of the Royal palm (called palmiche) on rope fastened to top of tree and pulled out at an angle of 45 degrees. It is superb pig fattener food. The large palm leaf is called yagua and used for many things. Met American anthropologist called Withers and had long drink and talk session with him. (Cirio kept on collecting with Alcalde).

NYSC NOTES NUMBER 214 SEPTEMBER 1975

NEW YORK SHELL CLUB

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FOUNDED JAN. 1949

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NEW YORK SHELL CLUB NOTES No. 214 September 1975 Page 1

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, OCTOBER 12th, 1975, at 2:00 P.M.

PROGRAM: COLOR SLIDES OF SHELLS by WILLIAM BLEDSOE

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"NEW YORK SHELL CLUB NOTES" que con su Número Especial 198 (Enero 1974) festejó su 25° Aniversario y alcanzó su No. 202 (Mayo de 1974), lo que evidentemente significa una labor continuada y un esfuerzo permanente en interés de la Malacología, que debe recibir nuestro aplauso.

COMUNICACIONES SOC. MAL. DEL URUGUAY, 4(27):54.

Muchas gracia, amigos.

The CONCHOLOGISTS OF AMERICA will hold their fourth annual convention October 4 through October 7 at Windjammer Motor Lodge, Ocean at 19th Street, Virginia Beach, Va. 23458. For information flyer, write to COA Sec'y Dorothy Janowsky, 946 Ralph Avenue, Brooklyn, N. Y. 11236.

ON PLANORBULA JENKSII H. C. CARPENTER, 1887. This small wheel snail is common in shallow water pools and elsewhere in Long Island and New York (see Jacobson & Emerson, SHELLS FROM CAPE COD TO CAPE MAY, Dover, 1971, page 29). In the latest number of NAUTILUS (Vol. 89, p. 96) Douglas G. Smith of the University of Massachusetts presents some telling evidence showing that the species is identical with Planorbula armigera Say, 1818, a species widely spread in the eastern half of the nation. If this turns out to be indeed true then we shall have to exclude jenksii and replace it with armigera in all our local fauna lists.

mkj

LONG ISLAND NUDIBRANCH AND SACOGLOSSAN SUPPLEMENT

Ron Rozsa

This note reports five additions to the Long Island nudibranch and sacoglossan checklist (Rozsa, 1974) and notes concerning previously collected species (see annotated checklist). To date the number of identified nudibranchs and sacoglossans occurring in Long Island waters is 16 and 5 respectively.

Three recently collected additions are *Cuthona concinna*, *Ercolania fuscata* and *Placida dendritica*. According to Franz (1970), the two sacoglossans *E. fuscata* and *P. dendritica* have been recorded in northern New England, southern New England and Virginia-North Carolina. Dorothy Raeihle (1974, personal communication) has collected *E. fuscata* previously in Long Island waters from Bayville (1963-1968) and at Long Beach Bay (1966) but her sketches of this species have not been examined. The nudibranch *C. cuthona* is reported as far south as southern New England (Franz, 1970). Although Abbott (1974) reports this species from Nova Scotia to New Jersey, no reference is given for the New Jersey specimen.

P. dendritica probably represents a species newly extending its range (Clark and Franz, 1969) due to the recently established and now abundant green alga *Codium fragile*, which constitutes the primary diet of this sacoglossan. *E. fuscata*, known to inhabit salt marsh pools (Russell, 1946), was discovered in *Salicornia europaea* salt marsh pannes on Fire Island.

Two previously collected unidentified species reported in Rozsa (1974) have been identified as the sacoglossan *Hermaea cruciata* and the nudibranch *Doriopsilla pharpa*. The known East Coast records of *H. cruciata* include the original description of a specimen from Naushon Island, Massachusetts and two reports from Chesapeake Bay (Vogel, 1971). *D. pharpa*, which feeds suctorially on sponges, has been collected from Virginia to Georgia (Marcus, 1972) and recently from Waquoit Bay, Massachusetts (Morse, 1974). This northern extension to Cape Cod may be the result of transplantation of this nudibranch by aquaculture practices (Morse, 1974).

The nudibranch *Cuthona nana*, recently reported in Maine and New Hampshire (Harris, Wright and Rivest, 1975), frequently feeds on colonies of *Hydractinia echinata* encrusting the shells of the hermit crabs *Pagurus acadianus* and *P. arcuatus*. One unidentified nudibranch observed only once at Shinnecock Inlet on a shell encrusted by *H. echinata* and inhabited by *P. pollicaris* may be this species. The presence of this species of nudibranch on Long Island should be further investigated.

Preserved specimens exist for all species identified in this report in my personal collection with the exception of *D. pharpa* and *Hermaea cruciata* although color slides remain of the latter.

ANNOTATED CHECKLIST

Order Sacoglossa

Ercolania fuscata (Gould, 1870; = *Stiliger fuscatus*): Watch Hill, Fire Island, 6/1/74, five specimens collected.

Hermaea cruciata (Gould, 1870): One specimen collected in the vicinity of Mott Lane adjacent to the Carmans River by Laura Brown (1973, personal communication).

Placida dendritica (Alder and Hancock, 1843; = *Hermaea dendritica*): Ponquogue Bridge, Shinnecock, 4/10/74, 4 specimens; Bellport Bay, 4/11/74, 5 specimens; Gardiners Bay adjacent to Gardiners Island, 4/23/74, 4 specimens; west jetty at Shinnecock Inlet, 4/28/74, 2 specimens.

Order Nudibranchia

**Aeolidia papillosa* (Linnaeus, 1761): West jetty at Shinnecock Inlet, 4/28/74 and 5/5/74, 1 and 15 specimens respectively.

**Catriona aurantia* (Alder and Hancock, 1842): West jetty at Shinnecock Inlet, 4/28/74 and 5/5/74, 25 and 11 specimens respectively collected on *Tubularia* sp.

Cuthona concinna (Alder and Hancock, 1842): Bellport Bay, 4/11/74, 3 specimens.

Doriopsilla pharpa (Marcus, 1961): Napeague Bay, 4/22/75, 2 specimens collected on *Crassostrea virginica* by John Black; previous specimens of this species were collected by the author in the Gardiners Island vicinity on the sponge *Cliona celata*.

**Dendronotus frondosus* (Ascanius, 1774): West jetty at Shinnecock Inlet, 5/5/74, 3 specimens.

**Doto coronata* (Gmelin, 1791): West jetty at Shinnecock Inlet, 4/28/74 and 5/5/74, 1 and 31 specimens respectively.

**Polycera dubia* (Sars, 1829; = *Palio lessonii*, d'Orbigny): West jetty at Shinnecock Inlet, 4/28/74, 1 specimen.

**Tergipes tergipes* (Johnston, 1835): East side of Gardiners Island, 4/23/74. 23 specimens of this species, previously reported from Cold Spring Harbor (Balch, 1899), were collected on hydroids (Campanulariidae?) attached to *Laminaria agardhii*.

*Notes concerning the distribution of previously listed species.

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BOOK REVIEWS:

AMERICAN MALACOLOGISTS, 1975 SUPPLEMENT, PAGES 495-609. $1.00
R. Tucker Abbott, Editor, Box 4208, Greenville, Delaware 19807

This continues the biographical listings begun last year. The living malacologists and collectors are still listed separately from the deceased ones and a large number of hitherto missing biographies have been supplied. We find, for instance, that Walton Brooks McDaniel of Haddon Heights, New Jersey is the oldest living amateur conchologist in America, having reached 104 years in 1975. However, some prominent names are still absent, notably that of R. E. Call, a 19th century student of the freshwater mollusks who produced several very important publications. This and others will undoubtedly be supplied in later supplements or in a complete second edition which is promised for 1977. Students will find this to be an important research tool. The reviewer is surprised that the present well bound and well printed supplement can still be sold at such a low price.

DICIONÁRIO CONQUÍLIO MALACOLÓGICO
by Dr. Maury Pinto de Oliveira and Maria Helena Rodriguez de Oliveira,
Juiz de Fora, Minas Gerais, Brazil

This is a well printed and clearly worded glossary of the commoner terms which the reader of malacological literature is likely to encounter. It is, of course, written in Portugese, but anyone with even a slight reading knowledge of Spanish or French can make out most definitions with little difficulty. The listing is quite complete and the terms in a slightly different spelling also appear in English publications. This well worth effort turns out to be quite successful.

mkj

MEDICINES FROM THE SEA

(1) The octopus is the source of the most potent agent against high blood pressure. From this mollusk we get Eledrisin which is 10,000 times more powerful than Quinidine, a standard drug.
(2) One product from algae keeps blood from clotting while another hastens coagulation.
(3) A sponge extract now lengthens the lives of leukemia patients.
(4) Sea urchins and sea stars provide a most valuable anti-cancer agent.
(5) Seaweed extract is now being used to heal gastric and duodenal ulcers.

PANDORA'S BOX SERIES by Robert J.L. Wagner in MOLLUSK CHASER, June 1975.

WSM - AMU JOINT MEETING JUNE 22-26

Approximately 228 delegates attended the joint meeting of the American Malacological Union and the Western Society of Malacologists held on the campus of San Diego State University. Dr. George E. Radwin of the San Diego Natural History Museum and members of the shell clubs of Southern California and Arizona were our gracious hosts.

Papers were presented in the largest of the halls of the Aztec Center (a two-story complex of lecture halls and service areas) with discussions continuing in the adjoining lounge over coffee. Presentations included reports of studies, discoveries, problems, and theories, on land, freshwater, marine, and fossil species. The exchange of information again proved the value of the annual meetings.

Informal evening programs were held in a smaller hall and included an auction of shells, Robert Robertson's portraits (often candid) of American malacologists, and a meticulously prepared series of slides presented by Leroy Poorman -- "The life and times of S. Stillman Berry." Dr. Berry was present and at times gently guided the narrator with a small correction or inserted a short anecdote.

Special events had been arranged: On the first evening we were guests of the San Diego Shell Club at dinner, "luau style," served in the courtyard of the Olmeca dormitories. On the second evening we were guests of the Conchological Club of Southern California, at a "chuckwagon style" dinner. There were excursions to the aquarium at Scripps Institution of Oceanography at La Jolla where we saw (among other things) several interesting living mollusks from the Pacific, and to the Museum of Natural History where Dr. Radwin gave a guided tour of the Department of Marine Invertebrates. There was also, for hardy souls who wished to arise in pre-dawn darkness, an opportunity to hunt nudibranchs on a low tide. Not being one such hardy soul, the writer is unable to offer any information on the success or failure of the mission, or whether it took place at all.

The meeting officially concluded with the annual banquet where, after an excellent steak dinner, we enjoyed Sam Hinton's entertaining remarks on "The Taxonomy of Common Names." The banquet favors were shell flowers enclosed in plastic cubes. They had been artistically crafted by members of the Yucaipa Shell Club and were most attractive and appropriate mementos of the San Diego meeting.

* * *

The American Malacological Union has accepted the invitation extended by Dr. David H. Stansbery to hold their 42nd annual meeting (1976) in Columbus, Ohio, to be hosted by Ohio State University. Presiding will be President Dorothea S. Franzen, of Illinois Wesleyan University. Other officers for the coming year are: President-Elect, George M. Davis, of ANSP; Vice-President, Henry D. Russell, of MCZ; Publications Editor, Dolores S. Dundee, of LSU. Dr. James W. Nybakken will serve as president of the Western Society of Malacologists.

Dorothy Raeihle

MALACOLOGICAL SOCIETY OF CHINA

In 1968, the 3rd specimen of Pleurotomaria rumphii Schepman was discovered off Taiwan and was subsequently purchased by a museum in

Japan for US$10,000. The extremely high price commanded by this specimen aroused a great deal of enthusiasm among the public and raised their interests for precious shells as well as malacology in general. ... The Malacological Society was founded in October 1970 after meetings of some 30 promoters. It has more than 200 active members at present, with about a dozen foreign members. The membership is open to all individuals interested in the field of malacology. Dues are US$4 for individuals, US$8 for institutions. The Society publishes the BULLETIN OF THE MALACOLOGICAL SOCIETY OF CHINA and one issue per year is currently scheduled. The first issue (Vol. 1) was published in August, 1974 and can be obtained from the Society by sending US$5. Address inquiries to: Malacological Society of China, c/o Taiwan Museum, Taipei, Taiwan 100, Republic of China.

. . . . Malacological Review, 1975, Vol. 8, p. 133.

ED. NOTE: The price for the Pleurotomaria was accurately copied from this item in the Malacological Review. Some knowledgeable people comment that it was unusually high, probably the highest price ever paid for a single shell.

mkj

GOSH-I-NEVER-KNEW-THAT-BEFORE-DEPARTMENT

"In the area where the snail population is low, students are organized to pick up snails with chopsticks (to avoid infection)." From the article entitled MASS CONTROL OF ONCOMELANIA HUPENSIS, SNAIL VECTOR FOR SCHISTOSOMIASIS IN THE PEOPLE'S REPUBLIC OF CHINA by Lois Wong Chi of California State College (Veliger, July 1, 1975, 18(1): 95-98).

We always believed that infection can result only from immersion in water where the cercaria have escaped from the body of the infected snail and penetrate the skin of human beings. Handling dry snails can cause no harm. It is to be hoped that some American schisto expert will discuss this queer article which includes, among other things, statements from the great malacologist Mao Tse Tung.

M. K. Jacobson

FROM THE MINUTES OF THE JUNE MEETING

President Frank Nelson reported that a Florida land developer had plans for a land-fill operation and dredging for residential canals that would destroy 51 linear miles of mangrove and swamp near Marco Island. He gave the address of the Corps of Engineers office in Jacksonville and suggested that members write, as individuals, to protest.

As chairman of the Nominating Committee, Dorothy Raeihle proposed that all incumbent officers and directors be re-elected to a second term. A motion that the Secretary cast one ballot for the entire slate was approved.

Both of the day's presentations dealt with groups of muricids. The first speaker, Bob Janowsky, reviewed for us the subfamily Typhinae, which numbers about 45 living and 80 fossil species. Sizes range from 6 to 48 mm. These are the only muricids that develop a posterior syphonal tube. The number of tubes per whorl, and their placement, angle, etc. are important in subdividing the group, as Bob's slide photos made clear. These are deep-water shells, not common in

collections. The smallest species is found at depths to a mile and a quarter. Little is known about the anatomy.

Our invited speaker, Jerry Harasewych, of Philadelphia, described the subgenus Siratus, of the genus Chicoreus. He noted that 40 to 50 species are found in the Caribbean, but only two others in the world, in Japan and Taiwan. The fossil record takes them back 25 to 30 million years. Like the Typhinae, they live at considerable depths and are not well known. Jerry observed that this subgenus has not been well defined, but to disregard it would leave a number of species hanging. He noted that there are several instances of investigators moving certain species in and out of the subgenus with surprising frequency.

M. Werner

FLORIDA STATE LAW RE: "DIVER DOWN FLAG"

From South Florida Shell Club's "Mollusk Chaser" of July, 1975:

Bob Pace reminds us that we too MUST have a "Diver Down Flag" near us at all times while shelling, wholly or partially submerged, if we are outside of an area customarily used for swimming only. This D.D.F. must be prominently displayed and free flying from boat or a float and we must stay close to it. The D.D.F. must be removed when the last person returns to the boat or when he leaves the water.

This D.D.F. waving in the breeze from a float or boat is serving notice to boaters that swimmers, snorkelers or divers are in the water in the nearby area and they, the boaters, must use extreme caution. Don't lose your head by failing to fly this flag while shelling on a reef, near a bridge, in a channel or offshore in water over your head. Rig up an innertube float and short flag pole for your "Diver Down Flag." (One white stripe diagonally on a red ground. --Ed.)

This LAW re: flying of such a flag is for our own protection as well as being fair to people in boats. Violation is a misdemeanor (Section 775.082, F.S.) and involves a penalty. It became a State Law, Chapter 74-344, effective 27 June, 1974.

Any Dive Shop, Marine Supply or Sporting Goods Store will carry this red and white D.D.F. which must be 12 X 12 inches OR LARGER.

ARTICLE OF THE MONTH

The methods of eliminating the ventral shadow in two species of mid-water squid is the subject of Dr. Richard E. Young's article, "Information feedback from photophores and ventral countershading in mid-water squid," published in Pacific Sci. 27: 1-7 (1973). The photosensitive vesicles detect the intensity of both downward-directed surface light and that from their own photophores. This is precisely what is required for an animal to eliminate its ventral shadow by producing a ventral bioluminescent glow. This also supports the theory of ventral countershading in mid-water animals.

Henry Russell

HOW TO STUDY AND COLLECT SHELLS

There are still some copies of this publication on hand at the discounted price of $1.50. Pick up your copy at the next meeting.

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PROGRAM: OYSTER CULTURE (*Crassostrea virginica*)
by Jack Foehrenbach

SHELL-OF-THE-MONTH

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A NEW BOOK ON THE CARIBBEAN FAUNA

Mr. Michael Humfrey, of Kingston, Jamaica, West Indies, in correspondence concerning *Micromelo undatus*, Bruguiere occuring in Jamaica, states that his book "Seashells of the West Indies" has just been published simultaneously by Collins in London and Taplinger in the United States. Members may want to keep their eyes open for this new work on Caribbean Province shells. The work will be reviewed in an upcoming number of the NOTES. Incidentally, he states that the above species is "uncommon in Jamaica, but is widely distributed around the Island." I have been researching the literature on *M. undatus* for several years now, and this is the first record of its being found in Jamaica. This book may be a very welcome addition to molluscan literature, if more such new records occur in it.

Mart Hulswit

BAGOONG

Yoshio Kondo, Bishop Museum, Honolulu, Hawaii

(NOTE: Dr. Yoshio Kondo is an eminent malacologist associated with the Bishop Museum since 1934. He has traveled extensively in the Pacific Islands, and these excerpts from an old letter to Karl Jacobson describe interesting sidelights to one of his collecting trips.)

Dear Karl,

If you ever come to the Philippines with me, I am going to play you a dirty trick. I'll have them prepare dog their style and call it a suckling pig and weeks later tell you all about it. Too late then to regurgitate it. Did I tell you about their fermented minnows called bagoong (pron. baga - ong NOT bagung). It is a species of small 1" - 2" anchovie which travel in enormous schools. Its best use is for chumming tuna fish but the Filipinos also like to eat it direct and not second hand thru the tuna fish. They send this fermented fish in jars all over the world and if you are a rice eater like me and raised from childhood to eat strong stuff as I was, you would consider bagoong out of this world. First they net this fish and then salt it with rock salt inside an old canoe on the beach with the tropical sun beating on it. That is one combination never fails to make fish give with the odor. This odor is the chief ingredient and to make it ooze out maximally, two barefeet fishermen jump on the pile of little fishes in the canoe bottom and make with the bagoong dance. I did not have my camera with me that day - oh, brother what a picture that would have made! Nevertheless, when I got back to Manila and had supper with friends Filipino style, Bagoong was one of the principal relishes they served and I ate great big spoonfuls of it, never mind what I saw done to it with bare feets.

After they do the bagoong dance on the dead and aromatic fish, they jam them into empty kerosene tins and let pure fermentation take over. They are loaded on Bagoong cruisers that take them to a seaport, this time at Puerto Princesa on Palawan, and from there transshipped to Manila. The entire trip from the beach to the metropolis may take a month or two and the little buggers get riper and riper, but you know how it is with these ferments, they last forever. To make rice tastier, you just ladle a spoonful of the stuff on a plate piled high with hot steaming rice and it really makes the rice yummy - IF you are a rice fiend like me. The orientals have other ferments to make hot rice yummy. The Chinese have a form of salt fermented fish. The Japanese have salted fermented tuna intestines and also Natto, a fermented form of soy beans that smells (some say!) like kukai. The Koreans have a fermented vegetable combo called Kimchee, and I sure would like to go there and investigate what-all the Siamese, Burmese, Annamese, Assamese, Malayans, and the Javanese and Bali Balinese use for to make the rice taste high.

When I was 18 or 19 a friend took us for Christmas vacation to his father's fish pond where they raised mullets for the market. There I saw the hired hands prepare salt fish. I'll never forget it. The old man saw a beat up mangy old mullet cruising around blindly and sick like. He pounced on it with a yell, split it without scaling or gutting it, massaged a handful of rock salt all over its inside and outside. Then he wrapped it up in an old gunny sack, dug a hole two

feet deep in the ground, and buried this dead salted fish. When he exhumed it two weeks later, it was just right, I mean RIPE. Like I said, if you are raised on stuff like that you never mind how it is prepared, you eat it eagerly.

REVIEW: FRESHWATER UNIONACEAN CLAMS OF NORTH AMERICA by John B. Burch, 1975. Malacological Publications, P. O. Box 193, Hamburg, Michigan 48139. $12.00. 18 + 204 pp., profusely illustrated.

This manual represents the second edition of Burch's (1973) earlier effort, of which I wrote that he "is to be commended for the scholarship, industry, and courage required to reduce (taxonomic) confusion as much as he has", especially in view of the fact that a "key to all (Nearctic fresh-water mussel) species is simply not possible at this time" (Fuller, 1974). This favorable appreciation is all the more germane to the 1975 edition because of its many improvements.

Many inadvertent weaknesses of the first edition have been stengthened. Useful sections ("Partial Synonymy" and "Expanded Bibliography") have been added. Numerous additional species are included. The excellent drawings by John L. Tottenham have been retained and complemented by additional figures, including maps of relevant drainage basins and biogeographic regions. Detailed annotations accompany many of the key couplets.

In the second edition Burch has adopted a partially novel suprageneric classification. That his point of view remains moot merely emphasizes the fact that the research upon which an eclectic piece like this depends is still far from complete. Partly for the same reason, naiad supraspecific concepts have for many years been based on small numbers of anatomical discriminants. This difficulty is aggravated because easily discernible anatomical characters (e.g., those of the mantle margin) have not been fully exploited for taxonomic purposes, because most mussel samples consist of shell material alone (the soft parts having been discarded), and because whole-animal specimens have usually not been preserved in lifelike aspect. Students who are unfamiliar with mussel anatomy and/or whose material is of inferior quality will have trouble with the earlier couplets of most keys, including some of Burch's. His "illustrations are of such a quality, however, that identification will often be facilitated merely by looking at the pictures" (ibid). Moreover, Burch has sought to maximize the use of conchological characters early in his keys.

Even Burch's 1975 edition has its imperfections (e.g., his treatment of the difficult genus Pleurobema is admittedly tentative), but it is as good as "the state of the art" will permit. This manual is a valuable (and often essential) addition to the working library of every North American aquatic biologist. Years will pass before we see radical improvements on this important work.

REFERENCES CITED -- Burch, J. B. 1973. Freshwater unionacean clams (Mollusca: Pelecypoda) of North America. -- Biota of Freshwater Ecosystems, Manual No. 11: 1-176. U.S. Environmental Protection Agency, Washington, D. C.

Fuller, S. L. H. 1974. Biota of Freshwater Ecosystems: A review. ASB (Association of Southeastern Biologists) Bulletin, 21: 109-112

Samuel L. H. Fuller, Academy Natural Sciences,
Philadelphia, Pennsylvania 19103

DISCORD IN PARADISE V

There are far too many names for the shells of this world. Dr. K. J. Boss of Harvard University proved this abundantly some years ago (see NOTES No. 173, pp. 2-3, June 1971), and most collectors of shells soon become painfully aware of it.

Many reasons have been given for this situation, and in this place we can only briefly refer to some of them. Some redundant names are the results of honest error, some of insufficient knowledge, and some of careless research. A less creditable reason is the desire to see one's name in print -- the "mihi itch" as it has been called, "mihi" being the dative case of the Latin "ego" and meaning "to me." In other words, "credit this species to ME!" Shell book authors in older times used "mihi" in place of their own names in books written by themselves when the reader couldn't help being aware of whom the "mihi" stood for.

But there used to be a still more heinous reason for introducing useless names. They were deliberately made up with malice aforethought in order to earn money. This complaint was made years ago by Mr. J. E. Gray of the British Museum (see American Journal of Conchology vol. 4, pp. 201-208). He wrote: "A very large number of species have been separated on very slight characters, or on the slightest variation of form, state and color. This has greatly arisen from the description and figuring of shells lately made known chiefly by falling into the hands of dealers, like Mr. (Lovell) Reeve and (George) Sowerby, or of persons employed by dealers ... A shell with a new name is much more valuable in a pecuniary point of view than one with an old and well-known name." Gray went on to cite an actual case: "A dealer offered me a new volute for ten guineas. I said it was not new, only a slight variety of a well known species. At length he admitted that he had nine specimens of the volute, and ended by offering to present me with the best of the series if I would describe it as a new species!" How did this incident end? Gray was later told that "at length he found a person to fall into his views and sold all his specimens at or above the first price mentioned."

Gray cited another incident known to him. "A short time ago a gentleman was induced to purchase a volute at a high price on the understanding that if he purchased it, it would be described, figured and named after him. This was done, although the shell is only a slight variety of a well-known, not uncommon South Australian species." Gray named a famous collector as to some extent guilty of such practices: "No one knew better than Mr. (Hugh) Cuming the value of a new name to his specimens, as shown by his enmity to anyone who doubted the novelty of the species described. He would not allow me to see his collection for many years after his return from South America, because I had pointed out to him at one of the meetings of this Society (Zoological Society of London) that some of the shells which Messrs. Sowerby and Broderip had described as new were well-known species, and well figured by Chémnitz."

Finally, Gray went on to show that this deplorable practice took place not only with species names, but also with genera. He found that "dealers were ... convinced, that the use of a larger number of genera extended their trade, as it produced a crop of customers (besides those

who merely bought shells for their beauty or variety) who purchased the less conspicuous shells for the purpose of obtaining one or more examples of each genus."

I might make the observation here, that whatever the motives of present day species- and genus-makers are, there is very little likelihood that this is one of them. Or is it?

MKJ

INTERESTED IN FOSSIL SHELLS? The following are some good buys in the field, well printed and excellently illustrated:

SOME NEOGENE MOLLUSCA FROM FLORIDA AND THE CAROLINAS by Axel A. Olsson and Richard E. Petit, 68 pp., 8 plates, 1964. $2.35.

SOME TERTIARY FOSSILS FROM SOUTH FLORIDA AND THE CARIBBEAN by Axel A. Olsson, 62 pp., 9 plates, 1967. $3.90.

EXPLORATIONS ON THE WEST COAST OF FLORIDA AND IN THE OKEECHOBEE WILDERNESS by Angelo Heilprin, reprint of the 1887 edition. 134 pp., 19 plates, $5.00. (Contains the original descriptions and illustrations of the famous fossil shells found along the Caloosahatchee River.)

REVIEW OF THE GENUS BUSYCON AND ITS ALLIES by S. C. Hollister, 80 pp., 11 plates, 1958. $4.21.

The booklets are all paper bound and can be obtained from --

THE PALEONTOLOGICAL RESEARCH INSTITUTION, 1259 Trumansburg Road, Ithaca, New York 14850. There may have been some adjustment of prices.

OF COMMON NAMES

The Japanese designations for the shells are truly fascinating, descriptive and picturesque. The Japanese name for Lunatia marmorata translates into "the shell that shines in the night." Terebridae are "bamboo shoot" shells. Conidae are "potato shells." Cowries are "treasure shells." Spondylus barbatus sheds its beard and becomes, in Japanese, the "chrysanthemum of the sea." Some names are more or less direct translations of the Latin such as "purplemouthed coral dweller" for Coralliophila violacea. Occasionally, the names are practically identical with the English common names. These include the "moon and sun" shell for Amusium japonicum, "spider shell" for Lambis lambis, "quail" instead of "partridge" tun for Tonna perdix. Rapa rapa remains the "turnip shell." But how about "devil's fang brush shell" for Mitra papalis?

Lambis chiragra is the "word for water shell." This derived from the arrangement of the six spines of the mollusk which was thought to resemble the Chinese character for "water." We recognize Arcidae as "ark shells." The well-known Arca noae from European waters refers to "Noah's ark." Arcidae are called "boat shells" in Japan. It is stressed, however, that the designation originated independently in the Orient and was not derived from the Occidental reference to "ark."

Excerpt from MOLLUSCANA by W. W. Sutow, MD
on the book called "KAI" by Habe and Kosuge.
TEXAS CONCHOLOGIST, Vol. XI, No. 3, March '75

MORE ON SNAIL FEVER IN CHINA

In the last number of these NOTES, very brief mention was made of an article entitled MASS CONTROL OF *ONCOMELANIA HUPENSIS* etc. by one Lois Wong Chi in The Veliger. On further reading we found this to be such a curious article that we hope to be forgiven for remarking on it further.

The article purports to deal with the (successful?) attempts to eradicate the chief snail vector of this disease from the country. But, as we noted last month, the article contains several highly doubtful statements. For example: "The land where the snails are found was flooded with water. The sudden rise of water level drowned the snails." *Oncomelania* is an amphibious creature related to our local *Pomatiopsis*. Can amphibious snails be drowned? Especially since it is only in water that they can transmit the disease. Again: "Colonies of snails are scattered in the vast unused wasteland." Snails are there, without doubt, but *Oncomelania*? One can seriously doubt that the attack is actually directed against the disease vector and assume with good reason that many innocent gastropod pulmonates are being exterminated. One reason is that nowhere in this article is there a description of *Oncomelania* and among the figures ornamenting the report there is no picture of the snail. Another reason can be seen below in one of Mao Tse Tung's slogans.

Other statements can be expected in brash propaganda broadcasts rather than in sober scientific reports. For example: "During the campaign program everyone is required to follow instructions faithfully in collecting and turning in their stool specimens to fecal testing stations...for detection of parasitic eggs, and that's not easy. Some smart alecs think they can get away with turning in animal dung instead." Further: "To generate motivation, slogans and Chairman Mao's quotations appear everywhere along the area of snail control -- roof tops, building walls, or banners -- as well as in handbooks written for snail control. Samples of quotations are: 'Schistosomiasis must be terminated.' 'Death to all snails!' (Ed. note: There we have it!) 'Service for the people.'Survey and analyse the snail situation, arm with proper preparation, lest you fight an aimless battle.'" And finally: "To sum up, what leads to the achievement of the control program could be attributed not only to the techniques, but also to the will and togetherness of the disciplined mass working toward a goal set by their political leaders." Rah rah rah! More can be said on the effectiveness of the program, but we leave that to experts in the field who will no doubt also comment on it.

MKJ

ARTICLE OF THE MONTH

Dr. D. M. Pratt writes that *Crepidula fornicata* has two aggressive tactics against attacks by the oyster drill *Urosalpinx cinerea*. The first is to lift the edge of its shell, extend the head, and with the radula to prick or rasp the predator's foot until it moves away. The second is to slowly, horizontally and continually, rotate its shell when mounted by an oyster drill until its predator's shell bears against an obstacle and it is dislodged. This article appears in Marine Biol. 27: 47-49, 1974.

Henry D. Russell

FROM THE MINUTES OF THE SEPTEMBER MEETING --

After welcoming everyone present to the first meeting of the new season, President Frank Nelson said that the number of new faces was unusually high, and that the reason would seem to be a mention of the Club in an article on shell collecting in a recent Sunday edition of the New York Times.

Owing to a variety of difficulties, motions were made and carried that further discussion of a possible fall field trip or other type of outing be canceled. Al Scarpetta accepted the chairmanship of a committee that will present, at the November meeting, recommendations for a field trip next spring.

The first speaker was George Raeihle, who showed slides taken during a trip to Jekyll Island, Ga., and described the collecting there. Embroidering on tradition, he followed up with a barrage of sunset photos. Dorothy Raeihle then showed pictures she had taken at the 1975 joint meeting of the AMU and the Western Society of Malacologists, in San Diego. She reported that 10 NYSC members had attended.

The Banana-of-the-Month presentation was made by Bill Old, who displayed a freak, "double-barreled" specimen. He than showed and commented on a series of slides of cones of West Africa, specifically Senegal and Gambia. He also showed action photos of the performing porpoise and beluga and killer whales at the California Seaquarium and of the San Diego Zoo.

Milton Werner

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NYSC NOTES NUMBER 216 NOVEMBER 1975

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, DECEMBER 14, 1975, at 2:00 P.M.

PROGRAM: LOCAL ENVIRONMENTAL FACTORS
by Mr. Fred Feldman (WOR Radio traffic reporter)

POINTS OF VIEW ON ECOLOGY
by Mr. David Peixotto

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Our valued member Mr. George Raeihle, who is incapacitated for the moment, sends his warmest thanks to all who were kind enough to send him get-well cards. We all fervently hope that he soon will be fully restored.

W O W!

(New column noting bloopers in the published literature)

H. Fechter writes on starfish in Grzimek's ANIMAL LIFE ENCYCLOPEDIA vol. 3, p. 376 (1974). The author informs us that Asterias, the starfish bane of oyster farmers, actually would rather eat barnacles than oysters. The fact suggests to him that the oyster farmer can make use of such a preference. Perhaps if the farmer introduced other mollusks, more to the liking of Asterias, he could turn their attention away and save his oyster crop. Adds Dr.Fechter: "This information may possibly benefit oyster farmers if they could introduce limpets of Urosalpinx (!!!) to their oyster beds." This could be as useful as introducing, say, Lewis Carrol's Walrus and the Carpenter to guard a bed of oysters.

MKJ

A CHILD'S LETTER ABOUT A VISIT TO LT. COL. (ret.) CORINNE EDWARDS:

We went to see Colonal Edwards. She had ~~a~~ horse shoe crabs this big. Isn't it incredible how small they get? Sinserely R. S.

IMPRESSIONS OF RUSSIA

Mathilde P. Weingartner

The first three weeks of July 1975 I joined 5,000 botanists in Leningrade for the XII International Botanical Congress. Everything was pre-arranged and prepaid. Our flight on Finair was uneventful, but we were not allowed to land a group flight in Leningrad, because the USA does not allow the Russian Supersonic Transport to land in Kennedy Airport. So we flew to Helsinki, from where we had a ten and a half hour bus trip in eight buses, arriving at our hotel in Leningrad at 10:30 PM.

On registering the next morning, we stood in long lines, to get our literature, our identification pins, get our money changed, find out where sessions were being held. Long lines for everything. Many day or half-day excursions had been arranged, well conducted by Intourist guides (just don't lose your guide). Photographing was allowed with a few exceptions. "You may not take picture of bridge, cruiser, airport, people without their permission, any installations." Most Intourist guides spoke fluent English, some did not, and the public in general did not converse with you. They don't even talk the same sign language, so it is hard to make your wishes known to waiters, hotel personnel, bus drivers, etc. or to ask directions. So, warning: Don't lose that Intourist guide.

The meetings at the Tauride Palace or the Institute of Political Science were frustrating: most chairman spoke only Russian; most speakers spoke only Russian. There were interpreters, but whenever they spoke, all the Russians began to chatter, so you could not hear properly. The same thing happened when anybody gave a paper in any language but Russian. I finally gave it up, and kept on going on excursions.

After ten days the field trips began, eighteen of them, in all parts of Russia, all at the same time. So you could attend only one! They all wound up in Moscow, so that we could all see the city. I joined a trip to the Northern Slope of the Caucasus Mountains. We had a fine botanist, a specialist in the Caucasian wildflowers, but he did not speak a word of English. We had the best interpreter, the head of the Intourist Service in the area plus two fine girl guides. They all spoke fluent English, but were no botanists. We therefore could not get accurate explanations of why one species differed from another.

When we arrived at our ski lodge (a ski lodge for young people) we were housed on the fifth floor without elevator service. They took everybody's blood pressure, and the doctor forbade six of us the joy of mountain climbing. Well, I didn't really care, but some of the others were really burned up about it. I botanized by myself below the ski-lift and took pictures of many alpine flowers.

Many of our fifty botanists collected many, many plants to press. I did not. I only took pictures. I should have collected the flowers I photographed; then the professor would have identified them for me on the last afternoon, and I would know what I took pictures of. So far there is no literature on the subject, and our professor is writing a book, but it will be in Russian and come out maybe five years from now. So that is not much help. I will just enjoy my slides as pretty pictures.

On the whole trip we saw no animals, no deer, no rabbits, no beaver, no muskrats, not even mice or rats. We wonder if they have all been eaten. However, we saw quite a lot of cattle and sheep which were eating the vegetation on the slopes, causing annual landslides. We got lots of fish to eat: smoked salmon, smoked herring, smoked sturgeon, caviar, and sardines. For one lunch we got a large can of sardines, without any opener. Since none of us had an opener, we all brought these cans back to the States. We did not see any shellfish on the menu or on the buffet tables. Not one. We found that food was available only in season, so we had hardly any potatoes, because they were not ripe. But fresh apricots were in season, plentiful and delicious.

On the way back we saw little of Moscow, because we had to stand in line so much: to get our hotel room, to get our return flight verified, to get our passports back, etc. I found Russia interesting, an experience, but not very enjoyable because of all the frustrations. In both Leningrad and Moscow they have a protozoa in the drinking water which affects 75 percent of the visitors in Leningrad and 25 percent in Moscow, and may take as much as ten weeks to develop. So don't drink the water, don't use ice, don't brush your teeth with water, don't take butter from ice tray, etc. There is mineral water, warm beer, "Limonade," soda, etc. Stick to these. HAVE FUN.

VOLUME II OF JOHNSONIA AGAIN AVAILABLE. We have just learned that the Department of Mollusks of the Museum of Comparative Zoology has issued a soft cover facsimile reprint of the entire volume. This fascinating and most important publication can be obtained by writing to the Department at Harvard University, Cambridge, MA 02138 for $25.00 plus $0.50 postage. Orders received before December 31, 1975 will be charged only $20.00 plus $0.50 postage. This is a wonderful opportunity to enrich your shell library.

NOTE ON THE HISTORY OF MALACOLOGY IN NEW YORK. Richard Ellsworth Call (1856-1917) was a prominent malacologist who specialized in the non-marine mollusks, chiefly naiads or freshwater mussels, of the Midwest. He is the subject of an interesting and important paper by Richard I. Johnson (Occasional Papers on Mollusks, Harvard University, vol. 4, no. 54, October 1, 1975), now on sale at The Department of Mollusks, Museum of Comparative Zoology, Harvard University, Cambridge, MA. 02138 for $0.80 per copy. In it we learn that, though Call spent much of his life elsewhere, he was born in Brooklyn and that he was a teacher of science in Erasmus Hall High School in Flatbush in 1898-1899 and in De Witt Clinton High School in Manhattan then, in 1905. To that extent he is one of us.

MKJ

From "Spectrum" in ENVIRONMENT Magazine of September, 1975:

"Dr. Stick of the University of British Columbia says: 'Mussels growing on creosoted timbers have a very high level of cancer-causing agents, compared to mussels growing on clean rocks.'"

DREDGING IN GREAT SOUTH BAY, LONG ISLAND, NY

Morris K. Jacobson

This huge expanse of rather shallow water, shut off partly from the ocean by Fire Island and the Hamptons, has long been a prolific source of New York's oysters and clams. Toward the western end it is quite shallow for the most part, reaching depths of only 15 to 16 feet at the deepest portions of the channels, being otherwise only 5 to 6 feet at low tide. However, toward the eastern end the water is somewhat deeper. In 1968 we went dredging there.

We first tried the western end, mainly because it was more accessible and also because we did not know. We used an open boat with a 5 hp outboard motor which we slowed down when we dropped the dredge and again when we drew it up. The dredging was uniformly poor, and the fact that the motor resented being slowed down so often did nothing to make the excursion any better. Over and over again the dredge came up with dead and broken shells, covered with sandy tubes left by some small marine worms. The best things were several complete *Anadara ovalis* Bruguière and *A. transversa* Say. At the deeper part of the channel, right at Jones Beach Bridge, the current was so swift that our dredge did not even hit bottom, and my timid suggestion that we stay till the tide turns and ceases running brought such disagreeable remarks from the rest of the crew, that I hastily gave up for the sake of peace. Besides, what could one find in a narrow channel when to the left and right, fore and aft of it we drew mostly blanks?

Another excursion (in a different boat this time with a more humble captain) took us on a trip to Fire Island and a few plunges of the dredge into the richer waters of the eastern end. But here again, for a majority of the casts, the results were not good; we got huge numbers of faintly yellowish *Gemma gemma* (Totten), some lively colored *Mitrella lunata* (Say) some very handsome *Eupleura caudata* (Say) and the usual shallow water stuff of Long Island. But one cast in 16 feet off buoy 13 about 1/2 mile from the Sunken Forest of Fire Island drew pay dirt. In it we found large numbers of *Mulinia lateralis* (Say -- the index of good shelling -- and then treasures began to show up: a good lot of *Turbonilla* sp., *Nucula proxima* Say in fair numbers, *Acteocina canaliculata* (Say), *Cylichna oryza* (Totten) and a few other interesting small species. But this cast, which had whetted my fading appetite for the drudgery of dredgery, was the only good one I made. My eager host-captain insisted I see the Sunken Forest, so we plowed through miles of shifting sand, saw some stupid trees, some larger holly trees, and lots of poison ivy and then hied us back to the boat, me eager to repeat my success of the lucky cast. Incidentally, the Sunken Forest trip wasn't a complete failure -- under the rotting bark of a fallen tree, I collected some of the ubiquitous *Zonitoides arboreus* (Say), a new record for me, if nothing else. But luck had turned again. The northwest clouded up ominously and dread of a storm made my doughty captain cast off immediately and make straight for home, not however, before my hand seive brought up millions of little *Diastoma alternatum* (Say) living on eel grass near the shore, as well as a small number of *Gemma gemma*, these quite different from those on the northern shore of the bay, being prettily tinged with rich purple. The storm threatened and threatened but never broke. But we were already home.

SHAKESPEARE ON SHELL COLLECTING

ON SCIENTIFIC NAMES: "But for mine own part, it was Greek to me."
Julius Caesar

ON CLEANING SHELLS: "You heavens, give me that patience, patience
that I need." King Lear

ON KEEPING A COLLECTION: "A local habitation and a name."
Midummer's Night Dream

ON SHELL IDENTIFICATION: "O Sir, we quarrel in print, by the book."
As You Like It

"What's in a name? That which we call a rose
by any other name would smell as sweet."
Romeo and Juliet

ON SHELL COLLECTIN: "What is't but to be nothing else but mad?"
Hamlet

"Though this be madness, yet there is method in't."
Hamlet

--Assembled by Stan Levine in 1961

ON WHELKS

The word appears in the following forms at various stages of the English language: wicloe, wiloc, wyloc, wylke, wilke, wilk, whilk, weoloc, welche, welk, wealk, wolke, walke. In Old English it was wiolok, from the West Flemish willok or woulok of uncertain etymology. (Seems our ancesters didn't know how to spell so good.) you bet

The word was frequently used, and of the citations in the Oxford English Dictionary, I select a few:

*One hid himself in the Woods, and liued only on Wilkes and land Crabs. Capt. J. Smith 1624. (Lived was spelt liued).

*Their shell fish are conques, perriwinkles, coneys, sogers, wilkes, etc. 1782.

*De anguillis, ostrix, condieres, welkes, floundries et aliis quibuscunque minutes piscibus venalibus. 1339. (get out your Latin dictionaries).

*Take walkys and seethe in Ale. Cookery Hint, 1430.

*Torch bearers are hauing (having) their lights burning out of whelks, or murex shells. 1605.

*The whelksmen who are the biggest rogues in Billingsgate. 1851.

*Carpicorne that is the signe of a goot (goat) in a welke shell. 1440.

*'Tis usual to giue (give) Drink to Children that have the Chincough, out of a wilk shell. 1681.

Whelk also means a pimple, pustule. Example: In the face ben redde pymples & whelkes, out of whom ofte renne blood and matere. 1398.

*I'll lay thee, miscreant! on my knee, And print such welks thy naked seat on. 1771.

Also means shelly. Example: Ne ought the whelky pearles esteemeth be, Which are from Indian Seas brought far away. Spencer 1591.

MKJ

CUBAN DIARY IV

Morris K. Jacobson

July 22, 1948. Large two inch frog walks across window of train and disappears in the frame. Political party names: Ortodoxos, Auténticos. *Arique* is the thread made from fibers of yagua.

Station 16. Arroyo de Cambao. *Ancylus*, other freshwater species.

Station 17. Vereda de Resbalillo. Rocky jungle off road, easy collecting, very rich. A wood cutter sends trunks sliding down from side of hill (that's what "resbalillo" means).

Station 18. Guayaco in Cambao. At side of road among low jungle cover, excellent collecting. Alcalde says no use looking for snails in living fence. Don't bother to verify, Arriero is a bird the size of a small pigeon, long tail feathers with a click and a croak for a call. Long wait for train to Seibabo. School urchins all over the station, 105 kids in one class run by a *viejecita* (old lady) they tell us; she puts hard problems on board and then whips the explanation into them (but what kids ever liked school?). The new school has no seats, blackboards, paper etc., but it is in walking distance of every house in town. Visit lumber mill, only one carriage. Lumber cut is rough. Four men work at the carriage, two juggle the logs with a winch, one at the engine, one to remove the sawdust in a wheelbarrow for burning.

Friday, July 23, 1948. Early by train to Caibaríen. Not much to see. Visit Sr. Prida, a *Liguus* collector, has huge jar full of the brown *L. flamellus carbonarius* Clench, rare shell found only on Mogote de Pita in Viñales. That's why it is so rare in nature. Go to Remedios by bus. Three-story church tower, very nice. Nice *parque*, narrow old streets, high sidewalks, rough paving, many houses shut and deserted. Looks like real old Spain.

Station 19. Palenque. Usual stuff. Rocks clustered with *Torrecoptis*. Collect near a quarry where rock is being burned for cement. Heavy rain, stuck in a country store. Peeved expression on face of horse whose master had tied it up right under a spout which vomited buckets of rain onto his back. Soldier lends us sacking to protect us from rain. Blisters on ball of foot caused by crumpled stocking. Bothersome. Decide not to go collecting tomorrow, too much trouble for the same old stuff. Room in Hotel Comercio hot and stuffy, but I sleep well. Open sewers in Caibarién. Nice and cool after rain. Soldier says to me, "Usted tiene aspecto español." I blush with pride.

Sat. July 24, 1948. Do not go collecting with Alcalde. Spend much of day in Playa Militar (beach), Remedios, and Parque de Caibarién. Metal rocking chairs in the park. Visit the embarcadero, not much to see. Then by bus through area of inconceivable poverty to the playa. Good collecting under rocks: *Seila adamsi*, *Triphora*, *Planaxis*, *Corbula*. See but do not collect large *Fasciolaria distans*, animal purple. Cool breeze very pleasant on beach. Beach nice and clean, apparently of "imported" coral sand, enclosed by boardwalk on which are chairs for everyone. Beach apparently divided into white and black sections, but little attention paid to this. Remedios is the nicest town I saw in Cuba. Pleasant streets, clean, well paved, plaza large, cool. Live chickens sold, feet tied. Ditto pig slung upside down from saddle,

pitifully. Shade trees very dense along streets and in plaza. Lots of repairing and building going on -- even a new aqueduct with pipes imported from England -- but lot more needed, a Remediano tells me. Bored after awhile, Sorry I didn't go with Alcalde. "Oooh," with a wave of the hand means "I should say so." Kid tells me "El inglés me encanta," and tries his out on me. Not bad, better than my Spanish. In park long, loud Cuban debate goes on. Oscar meets me at 3:30, had collected nice large cerion-like Centralia in Puntilla. Treat my blisters, hope they go down. Much thunder, no rain in evening.

FROM THE MINUTES OF THE OCTOBER MEETING --

The major item of new business, introduced by President Frank Nelson, was a proposal to create a number of standing committees. His two-fold purpose, he said, is to broaden and strengthen the Club's programs and activities, and to bring more members into active participation in the life of the Club. He distributed mimeographed sheets listing, tentatively, eight committees and a sub-committee, and including a form for application for committee membership. He requested consideration of it through the coming month, so that suggestions for addition or revision could be offered at the November meeting, along with applications. The committees proposed are:

1) Library
2) Shell Bazaar (to investigate possibility of an annual shell buying, -selling, -swapping day)
3) Membership (chairman: Veronica Johns)
4) Field Trip (chairman: Al Scarpetti)
5) Program (monthly meetings)
6) Social Activities
7) Shell Auction Sub-Committee (chairman: Sol Weiss)
8) Shell Show
9) Publicity

The program consisted of two presentations by Mr. William Bledsoe, of Los Angeles. He first showed photographs made on a recent trip to the Galapagos. His selection included splendid pictures of the local fauna. Mr. Bledsoe's second presentation showed, mostly in close-up, a wide range of magnificent shells from his own collection. Among the genera he covered were Pecten, Strombus, Terebra, Haliotis, Latiaxis, Conus, Spondylus, Voluta, Murex, Lambis, Cypraea, Epitonium, Pleurotomaria, and several Cephalopoda. Mr. Bledsoe, who is president-elect of the Conchologists of America, capped his generosity to the NYSC with a donation to the library fund.

Milton Werner

ARTICLE OF THE MONTH

Volume 32 (3) of the Journ. Mar. Res. for Sept. 1974 carries on pages 343-357 an article entitled "Regional variations in tropical high intertidal gastropod assemblages" by Dr. Geerat J. Vermeij. Here he points out that the high intertidal gastropods of Indo-Malaysia and Western Indian Ocean have many anti-predatory devices such as obstructed apertures, inflexible opercula, low spires and strong external shell sculpture. High species number, substratum specialization and anti-predatory devices occur in areas with long stretches of suitable contiguous coastline where climatic conditions have remained stable for long periods of time.

Henry D. Russell

NYSC NOTES NUMBER 217 DECEMBER 1975

NEW YORK SHELL CLUB INC.

FOUNDED JAN. 1949

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ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, JANUARY 11, 1976, at 2:00 P.M.

PROGRAM: TO BE ANNOUNCED
SHELL-OF-THE-MONTH

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FROM THE MINUTES OF THE NOVEMBER MEETING --

President Frank Nelson's first announcement was a reassuring one concerning Dorothy and George Raeihle. Both have been recuperating sati factorily -- she from a broken wrist, and he from an operation.

A continuation of the discussion of formation of new standing committ brought no changes in the proposed list, but did elicit several inter ing suggestions on procedures and activities. A number of members vo unteered to serve on the proposed committees. Most of them concerned public relations, reflecting the feeling that the Club should make it self more widely known, and easier for new collectors to locate.

The first speaker was Linda Jacobs, daughter-in-law of our founder, Dr. Walter Jacobs. Her subject was the preparation and cooking of sq Describing it as a tasty, inexpensive source of protein, sadly neglec in the United States, she displayed a booklet and folder issued by th National Oceanic & Atmospheric Administration of the U. S. Dept. of C merce, which instruct on the table use of squid. She then offered he own suggestions on dressing and cooking, aided by slide photos made i her own kitchen.

Our invited speaker approached the subject of mollusks-as-food from a different angle -- that of oyster culture. He is Mr. Jack Foehrenbac Environmental Chemist for the New York State Dept. of Environmental C trol. He noted that while the price of clams has tripled in the last years, the price of oysters has remained about the same, and yet sale have declined. He has been active, nevertheless, in Department effor to improve methods of oyster culture. He reported on recent and curr experiments, illustrating his observations with slides.

Milton Werner

PERFORATED PERIWINKLES

Members Mr. and Mrs. Albert Taxson brought some interesting shells t the last meeting of the Club. They consisted of five specimens of Littorina saxatilis (Olivi 1792) which had been collected September 1975 on the sea weed Lamellaria faeroensis Börgensen attached to lar granite boulders exposed at low tide near the Reversing Falls Park, West Pembroke, Maine. In association with these specimens they foun Nucella lapillus (Linnaeus 1758), the dog winkle. They reported tha they found no Urosalpinx cinereus (Say 1822). What was strange abou these shells was that each one bore a neatly drilled, countersunk ho little more than one millimeter in size. In four of the shells, the hole appeared on the penultimate whorl, and in the fifth on the body whorl. It is obvious that these holes represent the point of attack by predators who caused the death of the periwinkles.

Similar holes are locally frequent on Mytilus, Crassostrea, and othe species, but we have never found Littorina so attacked. This might b due to the fact that in our area large L. saxatilis the size of the Maine specimens (13 millimeters) are not as common as further north, and that more satisfactory food in the form of young Spisula, Mya, a Crassostrea is abundant. At any rate, these specimens convince us abundantly that Littorina is as subject to drill predation as other species.

The holes closely resemble those made by U. cinereus, but since the Taxsons report that they found only Nucella as an associate, it must be assumed that this species is the perpretrator. The INVERTEBRATA OF MASSACHUSETTS by Gould & Binney (1870), p.362, lists the following pertinent note: "Kiener states that the animal, (N. lapillus) which is perfectly white, is very carnivorous, and that by it are produced principally, the perforations so frequently observed in bivalve shel on the shore. This remark might apply to many of the perforated univalve shells; but it would hardly be expected that this animal, whos residence is confined to the rocks, would feed upon the animals of bivalve shells, which reside only in sand and mud. The Naticidae ar the more probable depredators in this case." The shells discussed i this note remain in the Taxson collection.

MKJ

ARTICLE OF THE MONTH

The April 1975 number of the California Fish and Game Magazine, vol. carries an article entitled, "Growth rate, distribution, and populati density of the Northern Quahog Mercenaria mercenaria in Long Beach, Ca fornia," by Jules M. Crane, Larry G. Allen and Connie Eisemann. The indicate the following: that the original introduction of the Quaho to Long Beach is not known, but has become well established, outcompeting other species for food sources, displacing native bivalve species and is able to survive greater environmental stresses such as sewage spills or introduction of sodium hypochlorite. The popula density has reached 556 individuals per square meter.

Henry D. Russel

SHELL SHOWS:

SOUTHWEST FLORIDA CONCHOLOGICAL SOCIETY, INC., Fort Meyers, Fla., Jan. 15-18, Exhibition Hall, Patio on Edwards Drive.

SOUTH FLORIDA SHELL CLUB, INC., Miami, Fla., Jan. 30 - Feb. 1st; The Museum of Science, 3280 S. Miami Avenue.

*BROWARD SHELL CLUB, Fort Lauderdale, Fla., Feb. 6-8, International Swimming Hall of Fame Auditorium.

FORT MEYERS SHELL CLUB, Fort Meyers, Fla., Feb. 9-14, Contact: Mrs. E Greene, 6203 St. Andrews Circle.

*PALM BEACH COUNTY SHELL CLUB, West Palm Beach, Fla.; YWCA, 901 South Olive Avenue.

SARASOTA SHELL CLUB, Sarasota, Fla.; Feb. 13-15, Exhibition Hall, 801 N. Tamiami Trail.

NAPLES SHELL CLUB, Naples, Fla.; Feb. 20-22, The Central Mall, Goodlee

ST. PETERSBURGH SHELL CLUB, St. Petersburgh, Fla.; Feb. 26-29, Treasure Island Auditorium, 120 108 Ave.

*SANIBEL SHELL FAIR, Sanibel Isl., Fla.; March 4-6, Sanibel Community Center, Periwinkle Way.

CENTRAL FLORIDA SHELL CLUB, Orlando, Fla.; March 26-28, John Young Museum & Planetarium, 810 East Rollins.

*JACKSONVILLE SHELL CLUB, Jacksonville, Fla.; July 31 - August 1, Jacksonville Beach Municipal Auditorium.

GREATER ST. LOUIS SHELL CLUB; March 18-21, 10340 Manchester Rd., Kirkwood, Mo.

*Denotes William E. Old will judge.

SUGGESTION FOR AN INTERESTING EXPERIMENT

It is well known that many limpets (Acmaea, Patella, etc.) display a strong homing instinct. During the night they wander off foraging for algae. But at daybreak they are always at the very spot from which the started -- their home. That this is so can be proved by an easy experiment which I found described in LIFE ON THE SEASHORES by A. J. Southwar of the Plymouth Laboratory in England (1965, etc., Harvard U. Press, p. He marked each of many shells settled in a distinct area and then photographed the whole group repeatedly at various times. The pictures show the same limpets in the same spots for months, even years at a time. Southward writes that "It is well to choose a fairly lonely place, and to make the marks as inconspicuous as possible commensurate with findin them again, in order to reduce interference with the experiment," i.e. by collectors who may be surprised to find "colored" limpets. He marke the shells by scraping them lightly, rubbing them with a pad dipped in alcohol, and then painting them with a quick drying enamel, a different color, presumably, for every shell.

This experiment is only preliminary. The really interesting one follow Southward speculates that the "homing response is probably a form perception of the surrounding rocks through the limpet's tactile senses

(e.g. foot and tentacles)." This means that the limpet must recall the paths it took and its home base by feeling its way along. To test this, Southward suggests "chiselling away a lot of the rock surface, and seeing what change (takes) place in the proportion (of limpets) returnin to base." He suspects that "present and future researches (might show) the existence of more sophisticated senses." This book was published ten years ago and experiments of this nature may well have been performe and reported. On the other hand, they may not have been. We did no research on this point. But even if they have, it is always valuable to report the results of corraborating or refuting experiments. The more the better until the points are established beyond doubt.

Should these lines inspire any of our readers to try the experiments on our local limpet, Acmaea testudinalis, may the editor expect the results to appear first in these pages? It would only be fair.

MKJ

DICORD IN PARADISE

THOMAS WYATT AND EDGAR ALLAN POE, A PAIR OF CONCHOLOGICAL PLAGIARISTS

Richard I. Johnson

In the introduction to his MANUAL OF CONCHOLOGY, Wyatt (1838) wrote that, "We have endeavored to give a free translation of Lamarck's system as simplified by De Blainville." The text is, indeed, a simple translation of the description of some of the shells and genera found in Blainville (1825). According to Wyatt, "The plates were drawn and colored with great care and accuracy from the natural shells in our own cabinet, under the superintendence of Mr. James Ackerman, artist." This is a bold lie; most of the figures are copied from Blainville, and plate 18 is a copy of Blainville's plate 40, without any attempt to disguise.

According to Allen (1926: 442-443) Wyatt's book had proved so expensive to publish that Harpers would not reprint it. It appears that Wyatt pai Poe $50.00 for the use of his name on a new cheaper edition, designed fo elementary school use, hoping by the use of Poe's name to further sales and to avoid trouble over the copyright with Harpers, the effect of whic was to alienate the 'affections' of that firm from Poe.

According to Robertson (1934) Poe was directly responsible only for the preface and the introduction which was a paraphrase of Brown, with the printing arranged by Isaac Lea who, it should be remembered, was not only a conchologist but a partner of Carey, Lea, and Blanchard, publishe

The text was paraphrased from Wyatt, with additional descriptions of the animals which, while credited to Cuvier, appear to be translated from Blainville. Plates 1-5 were lifted directly from Brown as are most of the figures on the other plates. It is said that when Poe was accused of plagiarism, he explained his method by saying, "All school books are necessarily made that way."

Poe's book must have enjoyed some success since it went through three editions (1839, 1940, 1845) issued with plain and colored plates.

Keen (1936: 43) pointed out that as a systematic treatise Poe's work can be safely ignored. Its interest is as a literary curiosity to the bibli grapher and collector of Poe's works and has been exhaustively studied by Heartman and Canny (1943: 41-44).

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From 4(50) OCCASIONAL PAPERS ON MOLLUSKS, Harvard U., 50-52, 19

THE STATEN ISLAND MUSEUM

Mathilde P. Weingartner

he Natural Science Association of Staten Island was started on November 1, 1881. It was composed of people interested in natural history on taten Island, such as Nathaniel Ford Britton, Arthur Hallick, Dr. Grata- ap, Sanderson Smith, William T. Davis, Charles W. Feng and others. In 905 the name was changed to the Staten Island Association of Arts and ciences, probably because someone gave them some objets d'art for the eum which they were trying to establish and maintain.

n 1918 the name was again changed, this time to the Staten Island Insti- ute of Arts and Sciences which is its official name today. The minutes f their meetings from the early beginnings were printed in the PROCEED- NGS OF THE S. I. INST. ARTS & SCIENCES in pamphlet form. From 1905 on hese Proceedings are a record of some of the high spots in natural his- ory and special articles written by experts. Most of the work on shells as done by Sanderson Smith and Arthur Hallick. William T. Davis, though "pack rat" collector and diligent observer, made only a few contributio o conchology (1) his preferences running to botany and entomology.

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1) See 17(1) PROCEEDINGS 1-7 for and annotated list of the Davis shell collection in the Staten Island Museum.

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he Association was formed mainly to work on Staten Island natural istory and therefore passed by a great deal of foreign material since hey rightly decided that they could never compete with the American seum of Natural History and should concentrate on local stuff and make hat as complete as possible.

vertheless they obtained some exotic birds, including two Passenger igeons and two Carolina Paraqueets, now both extinct, from the Crooke ollection at an auction by Howard H. Cleaves with money donated by W. T. vis. Crooke also rescued two copper plates of the John James Audubon phant-sized folios of pictures, but I don't know where these plates ar w. His shell collection went partially to the American Museum.

1975 SUPPLEMENT TO ROSTER OF NEW YORK SHELL CLUB

We welcome our new members, and bring you up to date on changes in address since our supplement of January, 1975.

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NYSC NOTES NUMBER 218 JANUARY 1976

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SHELL-OF-THE-MONTH

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REVIEW: THE SPELL OF THE SHELL by Martha Kealing Hodgson, Hawthorne Books, N. Y. $14.95. This is basically a travel book ingratiatingly written but often with rather caustic comments, as when the author discusses the shell art of Florida. Her discussion of shells is often exaggerated and/or incorrect. Anyone is entitled to write books on shells and all who do so are entitled to make mistakes and, heaven knows, all do. But when mistakes are made which could have been avoided by simple reference to -- or better, merely checking in -- any standard, readily available book on shells, mistakes concerning the simplest facts -- this is not easily excusable: e.g. the author collected Nerita peloronta in Fiji; a growth series of Murex radix includes at least six shells of other species, etc., etc. After all, the authors ask us to pay out honest money for their books. How about some honest work in exchange? In this connection, see Mrs. Teskey's remarks on a similarly unreliable book (200 NOTES 4, March 1974).

The editors of the New York Shell Club Notes would like to be swamped with material to consider for publication. We ask members to assert their creative impulses, share their collecting observations, experiences, and travels, and communicate with the rest of us through the written word! We could use the material, and it's a wonderful way to spend time, both writing and reading! Share what you know. It's very rewarding!

DISCORD IN PARADISE VI

It often happens that one reads something which brings about an explosion of blind fury. The thing to do in such a case is to sit down immediately, dash off a blistering polemic in reply -- and then file it in the nearest waste basket. This happens often; I have done it myself. But Dr. Embrik Strand at least once in 1932 (and probably more often also) did not do this. He published it all (FOLIA ZOOLOGICA ET HYDROBIOLOGICA, RIGA, LATVIA, vol. 4, pp. 103-133).

In the course of my search for material to include in this melancholy series of reports, I necessarily had to read a great many peevish, irritable, peppery articles which otherwise I would have preferred to skip. But Dr. Strand's outburst stands out blindingly, all alone. I never came across anything like it before. It is entitled harmlessly enough NOMENCLATUR UND ETHIK and was written in German. I found it among a heap of separates which lately came to my hands. Since it also bears the word NOCHMALS (once again), this is clearly not the first effort of the author. I dread having to look for his earlier articles of this nature.

Embrik Strand was primarily an arachnologist and lepidoptorist. His apparent hobby was to check all newly introduced zoological names in all fields, not only his own, and to replace preoccupied and otherwise unacceptable neologisms with others of his own composition. Of course each nomen novum was ornamented with the name "Strand". As a result, Strand names appear in all sorts of field, even in malacology. This is OK except that Strand replaced names which were known by specialists to be invalid synonyms. As a result instead of having only one useless name to clutter up the printed record, there were two: one a rejectable or already rejected synonym, and the other a new Strandian name for the invalid synonym. Naturally this upset the specialists who resented the intervention of an ignorant outsider who, in his ignorance, loused up the record and made things harder for them. Furthermore, Strand often discovered homonyms when none existed. Pilsbry noted such a case and in 40 NAUTILUS 100 (1931) and called Strand a "nomenclature pest". Strand shot back, all his cannons blasting away at once. I quote the paragraph in translation though it is not easy to reproduce in English all the firecracker fury of the pounding German. "A lovely example of a 'critic' (Strand always wrote this word and the word 'specialists' in quotation marks) showed up in the person of one Mr. H. A. Pilsbry who launched a blast against me in Nautilus. It is characteristic of this man that he signed this with "H.A.P." alone, whereas his full name "Pilsbry" appears in a notice immediately following. This can only mean that he was ashamed of his personal attack on me or did not have the courage to answer for it with his own name." This shows that Strand knew little about Nautilus even less about malacological literature in general. If he had, he would have seen that Pilsbry frequently used H.A.P. for briefer notes, as most editors do. But the ignorance of the printed record in other fields seems to have been Strand's chief strength.

I could fill and over-fill the space allowed me with similar examples, but I choose to confine myself to a few more to give the full flavor of the whole. "The authors (whose work he altered) didn't dare send me their 'criticisms', which shows that they tried to hide them from me. Doesn't this prove that their consciences were not clean and that they knew very well that their 'criticisms' could not withstand my objective countercriticism? It shows also that these gentlemen (Herren) who attacked me so treacherously (meuchlings) are shamefully lacking in manly courage." In several instances the authors did send Strand reprints of their criticisms. But this did not stem his fury. They only did this because "the authors had already discovered that their work could no longer be kept secret from me...the fact that (they) finally did send me their reports as an afterthought does not make their behavior morally any better."

He accuses his 'critics' of demagogy -- among a host of other serious faults -- whose remarks will be believed only by "thoughtless, superficial people, especially if they are also full of envy." He is furious that his 'critics' attack not the author of a new, invalid genus, but instead direct their fire at poor old Strand who merely corrected an invalid name -- thereby missing the whole point of his nomenclatural "pestmanship." He is not, Heaven forbid, against specialization or specialists: he has only fought (Front gemacht) "against the arrogant bigoted, and often openly dishonest activities of certain specialists." He is angry that his "critics" only bewail (lamentieren) his newly introduced nomina and say nothing about the fact that "much more" is contained in his nomenclatural work. For instance, in one of his works on the Arachnida, he discussed no fewer than 102 names, of which only (my emphasis) 23 were newly introduced by him. This shows that his "critics" were interested only in attacking him, not in arriving at facts.

He even permits himself a weak joke on one opponent's name, in return, as he says, for a joke the fellow made on his. Of one F. Hendel, whom he hated with a white hot hate, he says, "Hendel sucht Händel" ("Hendel is looking for a fight") -- both nouns being pronounced alike in German.

It is amusing to note that in a PS to this article, Strand admitted that he was often tempted to use even stronger language. "But on the advice of counsel I was compelled to express myself more mildly." What a man!

One more comment might be added. In his assault on Pilsbry, Strand noted dourly that Pilsbry used "this tone" in attacking other authors, as he did Tom Iredale (40 NAUTILUS 108). Pilsbry used terms like "bluffs", "bob-tailed flush" and others (Pilsbry himself was no slouch). Then Strand notes significantly that "here, too, only the signature H.A.P. appears." What a coward, he means to say. And yet in this very article Pilsbry refers to a monograph of his own in the Manual of Conchology, clearly giving his name away, even in Strand's terms. How blinded we become in our furies!

Morris K. Jacobson

SALE OF FLORIDA CORAL IS NOW FORBIDDEN. From the July issue of CONSERVATION NEWS we learn that the sale of hard corals, fire coral, and sea fans is forbidden in Florida unless a certified invoice shows that the specimens came from a foreign country. This new law is effective immediately and strict enforcement will be made.

From MOLLUSK CHASER Sept. 1975

A DONATION TO BERGEN COUNTY

Ethelyn Woodlock

Early last spring the Directors of the Bergen Community Museum in Paramus, N. J. asked me to paint backgrounds for five display cabinets in their Science Hall. By the end of the summer I had covered approximately fifty feet of canvas fifty-two inches high. The cabinets have the following themes: Microscopic Protozoa, Echinoderms and Coelenterates, Mollusks, Insects, Crustaceans, and Arachnids.

Since glass models of enlarged protozoa are no longer available for purchase by museums, the first cabinet was arranged entirely with painting. First I painted nineteen species of protozoa, greatly enlarged, then hung canvas at the back and curved it forward at the bottom of the cabinet. My granddaughter, Linda, who does stained-glass work, was able to cut four 4-inch circles of glass. I glued fine wire around the edges for cilia, painted both sides for a three dimensional effect, and hung them at the front of the case. Ed Dong, the Preparator, cut a piece of wood which covers the entire face of the cabinet. A thirty-inch circular cut-out presents a view into an enlargement of half an inch of pond water. The protozoa are numbered and Ed lettered the names that correspond to the numbers on the front of the wood. Can't you picture the children as well as adults peeking inside?

The American Museum of Natural History has a tremendous cold water ocean display and I made two special trips to study it. The canvas I painted for the second case is tiny in comparison, but it has the long kelp fronds, the sea grapes, *Molgula manhattensis* De Kay, and Plumose Anemone, *Metridium dianthus* Ellis. Reaching almost from top to bottom is a Great Pink Jellyfish, Lion's Mane, *Cyanea capillata* Linne. Also swimming is a White Sea Jelly, *Aurelia aurita* Lamarck and a golden-fringed Furbelowed Jellyfish, *Dactylometra quinquecirrha* Desor. Along the bottom of the case I arranged the exhibit of sponges, starfish, sand dollars, corals, and Green Urchins, *Strongylocentrotus drobachiensis* Muller. At the request of Ruth Noble, the former President of the Museum, who planned the exhibits, I took two *Arbacia punctulata* Lamarck from Maine and painted them purple in order to restore their faded color.

In April 1971, I showed forty of my paintings in one of the first Art Exhibits at the Paramus Museum. While making arrangements for my show, I felt that I could help the new Museum by donating a large mahogany cabinet with some of my colorful Atlantic shells. After the show was over, I also gave the Museum a painting, SAND IN MY SHOES, showing a large shell on a beach, which is on permanent display in an office. Now the mahogany cabinet is used for other exhibits and the shells are in the third case in the Science Hall, together with some of the North Atlantic shells, donated by Dorothy Germer, and a *Spondylus Americanus* Hermann and a *Cyrtopleura costata* Linne, donated by Helene Avellanet. My background for this case is an eleven foot canvas of sky and distant ocean in soft colors. I arranged the shells on real sand at the bottom of the case and each shell has an unobtrusive number next to it, with a corresponding list of the names on transparent plastic at the top of the glass doors.

In order to decide on a theme for the Insect case, I met with Mrs. Noble, Ed Dong, Joan Schuster, Executive Director, and Dr. Felina Johnson, founder of the Museum, and we agreed to have a panorama of Bergen County as background. It was the most difficult canvas because the painting starts with the Palisades and extends to the Ramapo Mountains, with the Hackensack lowlands in between. Painting the two high points and the one low within a span of nine feet was a problem, especially since the scene had to be misty with no definite objects. Along the bottom of the case I put simulated marsh grasses and painted glass for water. This case will have a rotating exhibit and at the moment my foreground is covered with cardboard and dirt and hundreds of Cicadae, the 17 year locust, *Magicada septendecium*, and presents a good picture of their life cycle.

In the last cabinet I painted the sky with the ocean at an angle and arranged a beachdrift slanting across the bottom of the case to a group of rocks at the right front. Horseshoe and hermit crabs, spiders, barnacles, etc. look quite natural along the drift. At the left front, I placed a large piece of painted glass on rocks with wood and real grasses around the edge to suggest a pond for crayfish. Putting this case together was almost effortless in comparison with the others.

When Ed and I finished hanging the last canvas, Ed stood back and exclaimed, "You know, the first law in Museums is never to have a background that overpowers a display. These do not, they all pull together and look natural and are quite an improvement over plain cabinets."

The Museum is pleased and I feel that my many months of work were worth the effort.

Last April, The Bergen County Artists Guild held a Tri-State Show at the Museum and Ethelyn's painting won the Award of Highest Merit.

ARTICLE OF THE MONTH

"Adaptive design of locomotion and foot form in prosobranch gastropods", is the title of a paper by Dr. Susanne L. Miller in Journ. Exper. Mar. Biol., Ecol. 14: 99-156, Feb. 1974. She points out that speed and tenacity do not represent competing selective pressures on the size and shape of the foot. Speed increases among species as the foot approaches or exceeds shell length and is highest if the foot is also broad. The optimal shape for both high tenacity and speed is a broad foot somewhat shorter than the shell. Waves of compression appear to be a specialization with the potential for maintaining high tenacity even at high speeds since the waves can be very small.

Henry D. Russell

For those interested in veterinary medicine, (John I.) Day remarks that in times past the blacksmith often doubled as horse doctor, and he quotes from "The Citizen and Countryman's Experienced Farrier", by J. Markham, G. Jeffries and Experienced Indians, published in Baltimore in 1803: "Recommended for leg sinew strain, with straightness, shrinking, or numbness of joints", was the following concoction: "Take a fat mastiff whelp, slay it and gut it, then fill the body with grey and black snails and roast it." This was to be basted with "oil of spike colored with saffron" and the strain was to be anointed with the hot drippings.Another cure of sinew strain involved the assassination of a cat ....

Red Smith, New York Times, Jan. 6, 1973

FROM THE MINUTES OF THE DECEMBER MEETING --

Almost as if conjured up by the opening of the Museum's new, permanent exhibit, "Mollusks and Mankind," a sailor's valentine appeared on the front table to brighten our year-end meeting. Unlike the one in the exhibit, however, this was plainly not a museum piece, but brand-new. Its inspired intricacy marks it immediately as the creation of an artist, and she is, as one could safely guess, member Ethelyn Woodlock.

The program theme, environmental protection, brought two invited speakersto the meeting. The first was Capt. David Peixotto, of the U. S. Army Corps of Engineers. He introduced himself as "one of the enemy," but immediately qualified the statement by noting that as an environmental specialist, he has little contact with the segment of the Corps responsible for its contruction projects. Capt. Peixotto said he expects that the Corps will assume increasing responsibility for environmental concerns, and that its reputation among conservation-minded people will improve. Today, before it can start a construction project, the Corps must submit an environmental-impact statement, which might originate either with staff experts or with an outside consultant. The statements cover ecology, environmental quality (pollution, etc.), esthetics, social impact (displacement of residents, intrusion on archeological sites, etc.), and economics. The Congress makes the final decision through its control of enabling funds.

In cases where commercial developers wish to enter a physical area where the Corps has responsibility, they must apply to the Corps for permits, and Corps' response is scrutinized by environmentalists like himself. The Corps mediates between the two sides.

Capt. Peixotto ended his presentation with slides made in the Los Angeles area, showing major sources of pollution, and the affected areas. The pollutants included smog, oil, refuse, chemical wastes, agricultural sprays and fertilizers.

The second speaker was Fred Feldman, the helicopter pilot who is WOR radio's traffic reporter. Fred said he considers himself one of the fore-runners among agitators concerned over air pollution. His efforts have included taking into the air with him Charles Luce, chairman of Consolidated Edison (the NYC electric utility), and several senators. He calls himself a practical idealist, and a practical ecologist. The qualifying word means he realizes, as an example, that mass transit the ecologist's pet, can't come close to replacing the automobile. It could never cover, at acceptable cost and with acceptable timing, every route that every commuter, shopper, etc. must travel.

Fred showed many slides, most taken from the air during his 13 years over the City, that showed dramatically how air pollution spreads from smoking stacks and fires, and how tremendous and heavy a smog bank can be on a bad day. He recalled tracking a horizontal column of smoke from Brooklyn to Jones Beach State Park -- minimum of 20 miles. The City's worst polluters, he says, are the Dept. of Sanitation, with its burning of refuse, and then Con Ed. He noted that the use of filters and precipitators in the stacks of Con Ed generating plants has brought noticeable improvement.

Milton Werner

A CHEMICAL "TIME BOMB"

A YEAR OF AN ESTIMATED TEN-YEAR CHEMICAL "TIME BOMB" has inexorably ticked away in the waters off Italy's southern Adriatic coast. The Sunday Times Survey reports a jurisdictional dispute revolving around the salvage of 250 tons of tetraethyl and tetramethyl lead that sunk in 200 feet of water after the collision last July of a ship of Panamanian registry with the Yugoslav ship Cavtat which was carrying 900 drums of the anti-knock lead compound.

The galvanized, painted steel drums have a life expectancy of ten years before corrosion effects allow the release of the highly toxic, non-water soluble chemical. The inevitable contamination of edible local marine populations raises fears of disastrous consequences likened to those which occurred in the mercury polluted Minamata Bay in Japan. Further complicating the situation is the fact that warnings by health officials in the area generally go unheeded -- contaminated shellfish beds containing cholera-carrying molluscs had to be destroyed by the Italian Navy several years ago because residents refused to believe their fatal effects.

While the dispute between the Yugoslav and Italian governments rages over who will pay for salvage, with Italy insisting the wreck occurred in international waters, British experts predict the dangers salvage operations hold. The dire toxic effects of even minor leaks of the compounds, which can be directly absorbed through the skin, they say, impose a major hazard on diving personnel. So far, only agreement on risk and expense has been reached. When the catastrophic clock finally ends its count, as yet to be determined is where the responsibility will lie or who is to accept the consequences.

from WATTS JOURNAL, Sept. 1975

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he NEW YORK SHELL CLUB meets on the second Sunday of each month, eptember through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MARCH 14, 1976, at 2:00 P.M.

PROGRAM: TO BE ANNOUNCED

SHELL-OF-THE-MONTH

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1976 A.M.U. ANNUAL MEETING IN COLUMBUS, OHIO. The dates for the annual meeting of the American Malacological Union are August 2 (registration) through August 6 (field trip), on the campus of the Ohio State University, Columbus, Ohio. Inexpensive, but excellent lodgings in university facilities will be made available, and plans for the meeting are well under way. Mark your calendar now, and plan to be there!

FOSSIL MAGAZINE is devoted to all forms of fossil collecting, studying, rranging, and describing. It illustrates numerous fossils every year, many in color. Special bonus for subscribing now is a 40 foot full-color poster of the fossil history of the earth. P. O. Box 3518, San Diego, Cal. 92103, one year $12.00.

HE CHAMBERED NAUTILUS NEWSLETTER (No. 1, October 1974) turned up in our "IN" tray on our desk. It will be (has been?) issued free, but "only when there is sufficient news or information." The editor is Mr. H. K. Dugdale, and the Consultant is Dr. R. Tucker Abbott. Contact the Delaware Museum of Natural History, Box 3937, Greenville, Del. 19807.

MKJ

IMPORTANT NOTICE

Our Club is now entering its 27th year of existence and the founders and earlier leaders are beginning to tire and retire. If the Club is to continue, a newer and younger generation must be ready to take over. All the council posts will need to be replaced by vigorous, forward-looking, enthusiastic, younger shell people who will give of their time and effort because they enjoy doing it -- as did the older, now fast fading-away generation. Above all, we need people who will carry on with the NOTES, that is, undertake to edit, print or have printed, assemble, address, stamp, and mail the publication, and to provide quarters where this can be done. The NOTES enjoys a very respectable circulation all over the United States as well as in many cities in Europe, the South Pacific, and the Americas. It would be a shame to let it disappear. We feel that this will not take place and that the N. Y. S. C., one of the oldest in the nation, will continue to flourish and carry on its traditions for many years to come. Anyone interested may either write to the President or speak out at one of the future meetings.

THE MOLLUSKS AND MANKIND HALL IN THE AMERICAN MUSEUM

"Mollusks and Mankind", a major new hall that opened at The American Museum of Natural History on Dec. 12, will have something for everyone: gourmets, shell collectors, art and archeology buffs, and naturalists, to name just a few. Covering the many uses of mollusks and their shells by past and present cultures around the world, the permanent hall includes sections on the mollusks we eat and wear, on those that appear in our art and as religious symbols, on the mollusk shells that we use for utensils and money, and on mollusks as living species, outnumbered on by insects. Such a comprehensive approach to a single subject -- mollusks -- is a new one for the Museum, which put an unusual combination of designers, malacologists and anthropologists to work on creating the new hall. The first exhibition of its kind in the U. S., its goal is to depect the important relationship that has existed for millennia between these abundant animals and human society.

"Mollusks and Mankind" employs a variety of modern exhibition techniques to tell its story. Close to the main entrance, for example, there is a section on the biology of mollusks, the first time that this subject has been treated so extensively in a museum exhibition. It includes a continuously-running analog computer film on the mathematical pattern of shell growth as well as models and scanning electron microscope photographs depecting shell structures and how they form. In the ethnological section of the hall, a prehistoric shell midden has been recreated. Such middens, or garbage heaps of discarded shells, give archeologists clues about how mollusks were used by ancient peoples. They reveal the relative dietetic importance of various species, and also indicate changes in climate and other physical conditions, and in patterns of behavior and settlement. The ethnology section also includes a display of mollusk specialties (replicas), such as fried octopus, that are popular in various countries. Some of the special containers or plates in which they are served are shown, and to give visitors an idea of the variety of edible mollusks to be found around the world, there is a display of actual shells from different regions.

ells have been used extensively by human cultures throughout history s items of beauty and as emblems of status in religious and ceremonial ituals. Numerous examples are shown in the hall, ranging from a Manus anoe prow decorated with shells that was reserved for use by noble amilies and was collected by Dr. Margaret Mead, to a magnificent ceremonial mask of cowrie shells and leopard skin worn by the Kuba kings of Zaire when they assumed royal power.

igh above the part of the hall devoted to the use of shells and shell forms in art hang four colorful copies of heraldic banners -- one Japanese and three Medieval European -- which carry shell designs. Nearby, another continuously-running show presents slides of art through the centuries. Divided into several sections, it traces the use of shells as the material for making art objects and as subjects for the painter. The slide show also traces themes in art, for example, the frequent appearance of Venus emerging from a scallop shell on ancient Greek vases, in Renaissance paintings and the work of such contemporary artists as Matisse. One of the best examples in the hall of the shell in art is an original sculpture by Henry Moore. It depicts a woman with a skirt made from a cast of an oyster shell and was donated by the artist to the Museum expressly for "Mollusks and Mankind". Modeled in plaster, it was used to make nine bronze casts, all of which are now in the hands of collectors. "The Taste for Shells" deals with shells as a decorative motif. It includes such unusual items as a scallop-shaped Renaissance watch, a carved ivory figure from Japan of a man dragging an enormous conch behind him, and a replica of an ancient Egyptian gold cowrie. Many of the items included in the section have been proved by the Metropolitan Museum of Art and other New York City museums.

REVIEWS: SHELL CARVING, HISTORY AND TECHNIQUES by Carson I. Ritchie, A. S. Barnes & Co., 1974, 208 pp. $10.00, and SEASHELLS by Carson I. Ritchie, Golden Press, N. Y. 1974. 80 pp., $2.95.

Two books by the same author, the former very good, the other poor. We'll take the better one first. For those interested in uses of shells, this book is a veritable mine of information. Chapters deal with Mexican shell mosaics, American Indian wampum, inlaid nacreware, and with the sacred chank shell. There are chapters on pearl-shell carving in the South Seas and in Europe. Other chapters deal with elaborate Nautilus shell carving done in Renaissance Europe. Also there are chapters devoted to tortoise shell work and cameo carving. However, Victorian items such as sailors' valentines and Lord's Prayer tiger cowries, though well known in this country, are not mentioned. The book is profusely illustrated with black and white illustrations of items in museum and private collections.

The other book, SEASHELLS, though not very good, seems nevertheless to be a rather good buy. It is large and stoutly bound in cloth with a very attractive cover. It has numerous illustrations in black and white and several in good color. Unfortunately no fewer than nine of these color figures are "flopped over" or printed in reverse -- almost inexcusable in a book of only 80 pages. Most illustrations are of shells but there are also other exceedingly attractive ones of lovely shell carvings and antique shell artifacts. These pictures alone, flopped over and otherwise, almost seem to be worth the price of the book. The text includes a great many bits of molluscan and other information, some accurate, some misleading, and others outrageously incorrect. Here for instance, the reader is informed that piddocks have "mason drill" radulae; that operculums are secreted on the sole of the snail's foot; that _Strombus gigas_ is "among the fiercest of shellfish and has an agressive and fighting nature" (the author evidently was misled by the name _S. pugilis_, a different and equally inoffensive species); that "some mollusks draw food to themselves with their feelers"; that the color of cowry shells "are never seen in life, they are permanently covered by a mantle"; that the mantle of _Tridacna_ is colorful in order to attract its prey; that "sick" shells change to a dull buish black; that _Natica_ is a kind of bubble shell; the _Liguus virgineus_ (flopped over) is a "tiny" seashell as are also a fairly well-grown _Melongena corona_ and many other macrospecies; that bivalves are called lamellibranchs in England and pelecypods in America; that _Pleurotomaria salmiana_ is a large cone shell; that only a single species of _Neopilina_ is known; that it is the right-handed chank shell and not the left-handed one that is considered sacred; that _Ostrea edulis_ has an iridescent lining; that among shellfish offered for sale in England as seafood are large numbers of species from the South Pacific; etc. etc.

Naturally many shells are misidentified, and most names are either outdated or misspelled. It would be a waste of space to point out all these errors. It is safest to disregard all the names in this book and rely on more authoritative works. This book shows again that it is a curious fact that in the present flood of shell books, many are now appearing with so many blatant and glaring errors, that perhaps never before in the history of conchology, even when the study was first beginning, has so much ridiculous micinformation been made available to the public. We heartily approve of Margaret Teskey's suggestion in an earlier number of these NOTES (in connection with a similarly misinformed book) that if these books are purchased by libraries, they be excluded from the section on biology and be confined to the section of imaginary fiction.

William E. Old and Morris K. Jacobson

DISCORD IN PARIDISE

In No. 201 (April 1974) of these NOTES we presented a brief account of a spirited flurry between Dr. B. Schimek and Mr. Frank C. Baker regarding some names of fossil shells. Now Dr. Henry van der Schalie of the University of Michigan in Ann Arbor is kind enough to add a few words to this account:

"Both men were personal friends of mine and it was clear to anyone who knew them that they were destined not to agree with one another!

"Briefly stated their feuding came about in their differences in interpretation of fossil material. Shimek was without doubt one of the all time great people in studies of loess, its formation and the fossils it contained. F. C. Baker liked to name varieties and did so with fossils about which he often had only second-hand information. Some sharp words were used, but the gist of their differences seems best expressed by Shimek (44 Nautilus 39) as follows: "Mr. Baker seems to think that the writer's objection is to the recognition of varieties. As a matter of fact varietal names are often convenient and necessary, particularly where they are correlated with definite exological conditions. But too often Mr. Baker assumes conditions for which there is little foundation.

repeatedly in his papers he refers to depauperate shells as evidence of a colder climate during the deposition of the loess, and this attitude is further shown by such names as gelida for some of his varieties.'" For Baker's retort, the reader is referred to the item in the NOTES.

mkj

FROM THE MINUTES OF THE JANUARY MEETINGS --

President Frank Nelson announced Sol Weiss's request that those who plan to donate shells for the April auction inform him as far in advance as possible as to what the donated material will consist of. If necessary, Sol will provide transportation for the material.

Commenting on the change in printing quality that first appeared in the December issue of the Notes, Frank explained that the reason was the use of electronic stencils, which make typing, proofreading and correcting much easier. The loss of letters at the ends of lines will be avoided in the future. He also said that the increases in costs of postage, paper and envelopes will no doubt make other changes necessary. These might include mailing under a bulk permit, printing two sides, and going to a self-mailer format.

The first speaker was Mathilde Weingartner, who had spent part of last summer in Russia, attending the XIIth International Botanical Congress. She described some of the difficulties of traveling to and in the USSR, even as a delegate to a scientific meeting. The Americans, for example, started work on making reservations two years in advance, and got their visas two days before leaving the US. The group did do some sight-seeing and traveling in Russia, and Tillie had a number of excellent slides to show. They included not only scenery, but close-ups of plants. The results of the only shell collecting she was able to do were on display in five vials: a few land and fresh-water specimens.

The second speaker was Bill Williams, a member of the Nassau Community College faculty. He described a recent island-hopping tour of the Galapagos, showing a collection of superb slides of scenery, birds, iguanas, sea lions, crabs and plant life. He also spoke on a tour of the Inca ruins at Machupicchu, illustrating his observations with fine photographs.

M. Werner

ARTICLE OF THE MONTH

Pages 587-592 of vol. 12, Dec. 1974 of Toxicon carries an article entitled, "The venom and venom apparatus of the marine gastropod Conus striatus Linne." The authors, Shirley E. Freeman, R. J. Turner and S. R. Silva describe the venom of this fish-eating mollusc as a neurotoxin with a high molecular weight, and death to small mammals occurs due to respiratory failure. The radular teeth are well differentiated for the capture of small fish, but since the secretion of each specimen does not exceed 10 mouse units of toxin it is unlikely that the species constitutes a health hazard to man.

Henry D. Russell

MARKET SHELLING IN MARSEILLE

Monique Caubere

No trip for me is complete without shelling whether on the beach, in tide pools, or even in friendly livingrooms. But where does one go when wind and water are icy cold and fellow enthusiasts have gone out of town to excape oncoming winter? In Southern France those little fish markets right around the corner can be quite rewarding especially for the bivalve collector.

La Societé Pescadou in Marseille is one of these places. Just outside the store I noticed piles of slatted crates filled with the empty valves of *Pecten maximus* L. Most were perfect and not too difficult to match though the pairs had been separated. The colors ranged from light brown to bright orange on the upper valve. Some even had delicate tented patterns or shaded ribs. The lower valves tended to be whitish, often trimmed with bright pink near the hinge. All these beautiful shells were waiting to be picked up along with the city garbage. I salvaged a few pairs, but I was not the only one interested. When I passed there again a bit later many of the lower valves had been taken. Someone had wanted to use them as serving dishes for *Coquilles St. Jaques*, a delicious concoction made with the muscles of these shells.

The exterior of Les Pescadous had some lovely displays of fresh fish on ice beds bordered by green sea lettuce and lemons. There seemed to have been about twelve species in all from the common Mediterranean sole to the fearsome looking "Rascasse", a red speckled rock fish armed with sharp teeth and spiny fins. I also noticed several species of shrimp, crayfish and crabs. The interior contained many bins full of mollusks, some familiar such as *Mytilus edulis* L. and *Littorina littorina* L. Others included *Cardium edule* L., *Venus verrucosa* L. subtly colored with heavy ribs and *Callista chione* L. commonly called "Vernis" (varnish shells) on account of their thin, highly glossly surface.

Among the prettiest were *Pectunculus violacescens* Lam.. When fresh, these shells are patterned with brilliant purple or magenta on a white ground. There is also a dark, hairy periostracum along the outer edge. The problem with these shells is that they tend to fade to a dull brown within a few days regardless of dark drawers or mineral oil. Boiling especially ruins the color.

One large basket contained two species of tellins, *Donax anatinum* Lam. and *D. demistriatus* Poli. I could not imagine making a meal out of these tiny shells. Perhaps they, like the small crabs, were only used to flavor soups. The fisherman did not seem to know. They were even more puzzled by my interest, yet friendly and eager to answer questions. I was assured that all their mollusks were local whether from the Atlantic or the Mediterranean. I was then coaxed into buying some "Palourds" *Tapes decussatus* L. These were extremely variable in color and pattern. Some were a dull greyish brown. Others had bright dark zig-zags on a bluish grey ground or were even highlighted with yellow. These shells also tended to fade but were restored with oil.

The shop's main molluscan attraction was the oysters. Nowhere had I seen so many varieties (6?) sizes or prices. It was difficult to differentiate the species. *Gryphaea angulata* L. seemed to have been the most popular, though probably not as gastronomically interesting as another species (probably *Ostrea edulis* L. - Ed.) selling for over ten dollars the dozen. Some delivate frilly specimens caught my eye. I later heard that some oysters are grown and raised in trays thus completely safe from damaging wave action or other oceanic calamities. Perhaps these fell into that category. It would have been delightful to sample all these oysters but it was not financially feasible.

As I neared the back of the shop I was immediately drawn by two large buckets of sea water. One contained broken, worn shells occupied by hermit crabs, the other live specimens of *Murex trunculus* L. and *Murex brandaris* L.. These were not for sale. Maybe they were used to add interest to the live tank as a few specimens could be seen creeping among the lobsters.

My most curious find were some creatures called "Violets", (violets) a local specialty. These were shaped somewhat like leathery potatoes, and were coated with algae, bryozoans, small sponges, egg capsules, sea anemones and tiny shells such as juvenile pectens. Full grown *Apporrhais pespelicani* L. were also attached. The fisherman claimed the violets were mollusks though it seemed unlikely judging from their outer parts. Once the fibrous exterior had been severed and divided, the interior parts were similar to those of a clam. I soon hope to learn more about these unusual animals.

Market shelling cannot replace the excitement of turning over rocks, hauling up dredges or night dives on distant shores; but it is a great way to get live local shells and a terrific meal.

REVIEW: "Sea Shells of the West Indies by Michael Humfrey, Taplinger Publishing Co., N. Y. 351 pages, 19 text figures, 32 color plates. $19.95.

Most of this book is borrowed directly from Warmke and Abbott CARIBBEAN SEASHELLS, Dover, N. Y. $4.00, the drawings as well as the descriptions with slight modification. The nomenclature is out-dated with over 100 names being in this class, e. g. *Chlamys effluens* Dall should be *C. multisquamata* Dunker, etc. The figures of the small shells are so fuzzy that they are practically useless. More than 200 species found in CARIBBEAN SEASHELLS are not found in Humfrey's book. A redeeming feature of this book is that there is information on where the species can be found in Jamaica. This should be of help to those living or visiting that island. All in all, this is a very expensive book for the little it contributes to the collector who already owns CARIBBEAN SEASHELLS.

Morris K. Jacobson

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in Room 319 of the AMERICAN MUSEUM OF NATURAL HISTORY, with the following exception:

NEXT MEETING: SUNDAY, APRIL 11th, 1976

THE PLACE: BROADWAY DANCE STUDIO
31-08 BROADWAY
ASTORIA, QUEENS

PROGRAM: !!! PARTY !!! (*see below)
SYMPOSIUM ON SHELL PHOTOGRAPHY WITH SLIDES
conducted by G. Raeihle, R. Janowsky & F. Nelson

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NYSC ANNUAL SHELL-SOCIAL APRIL 11th:

*Next meeting will be our annual social meeting held, not at the Museum, but at the Broadway Dance Studio, 31-08 Broadway in Astoria. We thank our member Dorothy Jensen for again graciously making her studio available to us for our party. The studio is easily reached by BMT subway, ASTORIA line (RR train) to the BROADWAY stop. The building is on the southwest corner of 31st Street and Broadway; it is only a few steps from the BMT exit to the door of 31-08 Broadway. It is a short trip -- about twenty minutes from Times Square.

As in the past, we will have an auction, a bargain table, and a raffle. The cocktail hour (there will also be punch) will be followed by a buffet supper topped off by coffee and pastry specialties. Naturally, it will be necessary for you to help make the affair a success by making as many contributions as you can, be they books, shells, artifacts or whatever.

The Chairman of the Auction Committee, Sol Weiss, has asked that all of you planning to submit material to be auctioned at the Social please contact him at 65 Harvard Street, Roslyn Heights, N. Y. 11577, so that a list of the material to be offered can be prepared. He can also be reached at 516 MA 1-6571, so that arrangements for picking up contributions can be made. Mr. Weiss is attempting to put the auction on a better organized basis, which will enable the early arriving workers to set-up the tables, and allow him to prepare a list of the material offered for sale.

The amount of this year's donation to cover costs is yet to be determined, but should be close to last year's.

We look forward to a great afternoon! Frank Nelson

NOTES ON THE BREEDING OF THE FINGERNAIL CLAM, SPHAERIUM SULCATUM

Marion S. Hubbard

On May 25, 1975 I collected 16 pairs of the fingernail clam, Sphaerium sulcatum Lamrck in Beebe Pond, Vermont. (*) They were just under the surface of muddy sand in no more than six inches of water. The largest was about 22 mm long and 15 mm high -- about the size of my husband's thumbnail. The smallest was 15 mm long. Eleven pair were dead but undamaged; five pair were still alive. I opened three pair and disposed of the bodies. I was mildly surprised to find a tiny pair of clams in the tray with the cleaned shells. The other two pair were tightly closed and I did not want to damage the shells, so brought them home to Long Island in a little pond water. With a thin-bladed knife I was able to pry open the clams, and I was astounded to find two more tiny clams INSIDE one of the large ones. A quick trip to the library confirmed that Sphaerium do indeed keep their young inside their shells, in a brood pouch in the gill area, and sometimes keep them until they are, "1/4 or 1/3 the size of the parent." My "mother" shell was 16 mm long; the babies were each six mm long, one tucked neatly under each umbone of the parent. (The text added that you can sometimes find up to 20 of the tiny young inside one parent.) I suspect I have never found this during five prior summers because I never collected specimens as early as May. I would be interested in knowing now if these babies were brooding all winter, as I have read about the related Pisidium.(**) If I read the annulations (rings) on the shell correctly, my parent was in its second year. I have not found Sphaerium with more than two rings, possibly in the third year of life at the time of death.

On July 5, 1975, I found one more live adult in Beebe Pond with two young ones inside. On August 31, I collected 18 live specimens, and there were no tiny clams inside. About 2/3 of the latter collection were relatively small and had no growth ring; I assume that they were juveniles from the current year.

Karl Jacobson was kind enough to identify my species of Sphaerium. He had never seen such large juveniles inside a parent. The young clams are supposed to crawl out the siphon of the parent, but I suspect that these had grown too large to get through the siphon. We would be interested in hearing more about this from others -- either similar finds by others or a better explanation of the phenomenon.

(*) For those interested in the exact location, Beebe Pond runs south through another pond into Lake Bomoseen, which is in west central Vermont, 10 or 15 miles west of Rutland.

(**) Heard, Dr. William H., MALACOLOGIA 1965, 2(#); 381-411.

The third meeting of the Societa Malacologica Italiana will take place in the Ateneo Veneto (Campo S. Fantin) in Venice, Italy from October 9 to 11. People interested in attending and/or delivering papers, write to Mr. Paola Cesari, Museo Civico di Storia Naturale, S. Croce 1730, 30125, Venezia, Italy for details.

HISTORY OF MALACOLOGY TO 1825

Ducrotay de Blainville

NOTE: We originally planned to present a full translation of this history which constitutes chapter V of Blainville's MANUEL DE MALACOLOGIE ET DE CONCHYLIOLOGIE (Paris, 1925). But after completing a draft of the translation, we decided that as it stood, the translation had several features which made it inadvisable to publish in a journal like ours. We, therefore, decided to present a paraphrase or summary of the work, selecting those portions which would prove of interest to most of our readers and omitting those portions of more specialized interest. Chief of these omissions will be discussions of non-molluscan animals like brachiopods (lamp shells), barnacles, and tunicates, which in Blainville's time (and much later) were considered to belong to the molluscan phylum. We will also greatly shorten or even omit the lengthy listing of scientific names. In places we will offer Blainville's text in complete translation, but more often we will select, summarize, or paraphrase.

In his Histoire, Blainville stressed the importance of the "animal" which "inhabits" the shell -- today we realize that "animal", or rather "soft parts", and "shell" are one, like our own flesh and bones -- to arrive at a valid classification of the species. To stress his point, he invented the word "malacology" and contrasted it with conchology. Throughout this work this idea is constantly advocated. He also introduced the term "malacozoa" (= soft animals in Greek) to replace "mollusks" but it didn't stick.

The reader must realize that Blainville's work is by no means the last word on the subject. Much new data is now available. This is only what it purports to be: the view of an expert who died in 1850.

Blainville's work is valuable because in it are briefly and succinctly outlined the systems proposed by various authors, and it thus shows how the science developed. He relied on William George Maton's HISTORICAL ACCOUNT OF TESTACEOLOGICAL WRITINGS which appeared in volume 7 of the Transactions of the Linnaean Society of London, though he did not list this work in his bibliography. Blainville's excellent text is not easily available today. Hence we do not hesitate to bring it to the attention of our readers.

M. K. Jacobson

* * *

INTRODUCTION

All the authors of antiquity like Aristotle, Pliny, and others, seem to have known rather little about mollusks. They placed them with the animals which they termed "exaguinous" or bloodless. This division corresponds precisely to the "animals of white blood" of Linnaeus and the invertebrates of modern naturalists. They did this not because they thought that these animals had no blood, but to distinguish them from those with red blood. They further divided the exaguinous animals into two groups, the molluscan or soft bodied animals, and the testaceous or shelled ones. In this the ancients were more or less followed by the naturalists of the Renaissance: Belon, Rondelet, Aldovrande, and Jonston. These later authors, moreover, added nothing to the few facts that came down to us from antiquity.

But as it became easier to make collections of the shells of these animald, which were often of extreme beauty and had become objects of curiosity and even rivalry among the rich, people almost entirely forgot the animals and paid attention only to the shells. Thus was born that branch of natural history properly known as conchology. Many superb illustrated works in this field have recently appeared in many nations. However, Lister, the celebrated English physician and naturalist, and before him Fabium Columna and after him Wallis, Heyde, Swammerdam and others described the anatomy of several mollusks but no attention was paid to their work. People still tried to classify the mollusks on the basis of the external characteristics alone and disregarded all the internal features. It is true that Linnaeus in the earlier editions of his SYSTEMA NATURAE dealt with the animal inside the shells before defining the genera, but he confined his remarks only to those of which he had most information, and ultimately established his genera solely on the basis of external features.

The majority of the naturalists of the last century followed the great man's example, as we shall see presently. But some French naturalists early felt the necessity of studying the animals in order to arrive at a valid classification. Thus as early as 1743 Daubenton read a report on shell classification before the Academy of Science. Here, after he showed that knowledge of the shell alone was sufficient to set up some sort of classification, he remarked that the knowledge of the animal was indispensable for establishing a true system of conchology and a natural classification of shells. But he does not seem to have put these ideas into practice. Nevertheless, they are clearly expressed in the summary of the report later issued by the secretary of the Academy.

ARTICLE OF THE MONTH

Dr. S. v. Boletzky has an article published in Vie Vie et Milieu, vol. 23, fasc. 1-A, entitled, "A note on aerial prey-capture by Sepia officinalis (Mollusca, Cephalopoda)". In this article he points out and has photographs to confirm that this squid can not only see, but can also capture prey that are above water, by leaping out of the water or by throwing its tentacles into the air. If the prey is a crab, it may be seized by the tentacles, but equally, cuttlefish may "jump" on it, seizing it with the short arms. If the prey is a prawn, it will be seized by the paired long tentacles.

Henry D. Russell

The Mediterranean region wasn't the only place where shellfish dyes were produced in ancient times. This also took place among the pre-Columbian Indians around the Caribbean. But whereas in the Old World the Murex which produced the dye was crushed to produce the dye, the New World inhabitants patiently drew thread after thread over the mouth of Purpura patula thus obtaining enough threads finally to weave their dyed cloth. And the still living animal was retored to its accustomed place to secrete more of the precious fluid.

A "FIND" ON BLOCK ISLAND

Cherita Stark

A two day stay on Block Island, Rhode Island in early October, 1973 provided a general idea of the marine mollusks to be found there. Since the island lies only twelve miles northeast of Montauk Point, Long Island, New York, I expected the marine fauna to be identical, but came up with a couple of surprises. I was able to check only three locations, so this is a very incomplete picture.

The first area visited was Crescent Beach on the east coast of Block Island, just a few hundred yards north of the ferry landing in Old Harbor. It is a long sandy curve directly behind the Surf Hotel. During a half hour of shore collecting at low tide, signs of twenty species were seen. Most were dead, single valves or fragments, but it seemed that shallow water (in warmer weather) might yield more live specimens. There were many *Lunatia triseriatus* Say (Three-lined Moon Snail) and a single valve of *Arctica islandica* Linné (Black Quahog). In many collecting visits to Montauk Point, so few miles away, I've never seen an *Arctica islandica*.

A short distance north and west of Old Harbor was a beach 'check-full' of shells. From the road nearby, I could see the purplish ridge of a tide line that, to me, is a sign of a place worth looking at. Where that many *Crepidula fornicata* Linné wash up, other shells have to wash up, too! In the drift was an *Acmaea testudinalis* (*fergusoni* Wheat or Müller?) (Atlantic Plate Limpet), many 'ordinary' species, a 'feeling' that there were some tiny species if one were to search carefully. My husband Ernie and I had not brought our car over on the ferry to Block Island, and we were limited without our own transportation. When you are driving with non-shellers, you can't ask them to wait while you thoroughly 'scour' a beach. I stayed only about five minutes, but this small beach in front of the Narragansett Inn looked very promising.

The third area shelled was at the beautiful northern tip of Block Island. The North Lighthouse has a very rocky beach to the southeast. Many live *Littorina littorea* Linné (Common Periwinkle) were on the rocks, but little else was to be seen. I collected a recently dead *Polinices heros* Say which had washed ashore. A single valve of *Modiolus modiolus* Linné (Horse Mussel) was the only thing of any 'interest', since this is another shell that I haven't found at the nearby tip of Long Island. All in all, rather dull collecting .... except ....

While walking among the high dunes that are between the North Lighthouse and Chagum Pond there was a "find". The dunes are thickly covered with low vegetation and have narrow, hardly-visible trails. Ernie was leading our 'parade' of two when, at the high point of a dune, he stopped, turned and said, "We've come to Custer's Last Stand." I climbed up the trail, stood beside him and took a look. We had arrived at a large flat area of sand which was strewn with at least a dozen long-dead gulls. The mind jumped to the image of an "Elephants' Graveyard", but 'for the birds' -- a very strange sight! Why were they all there in this clearing on the dune? We walked among them to see if any had been banded so we could report the band number and location to the Bureau of Sport Fisheries and Wildlife in Washington, D. C. As I walked, looking down, I was surprised to see many shells there. I stopped to pick up a *Buccinum undatum* Linné (English Whelk) among the fragments of the usual shells that gulls drop to break and eat. A few steps from there, I stopped in my tracks -- a small COLUS (pygmaea Gould) (Pygmy Colus) was lying on the surface of the sand! It is a chalk white shell. Abbott (AMERICAN SEASHELLS - 1954 Edition p.229) reports this shell "commonly dredged from one to six hundred forty fathoms." How absolutely marvelous to find a deep-water shell on the top of a high dune far from the tide line, away from any dredging and lying completely uncovered on a sand surface! I will always be grateful to that tiny hermit crab (whose dried remains were inside the shell) for having been such an energetic hill climber!

It was a delight to add a third species of Colus to join the three Colus stimpsoni Mörch (Stimpson's Colus) collected Dec. 24, 1971 at Ditch Plains, L. I., N. Y. and the three Colus islandica Gmelin (Iceland Colus) collected Feb. 17, 1973 at Montauk and at Ditch Plains. Can anyone say that collecting on Block Island, Rhode Island is "ordinary", when you come home with a Pygmy Colus?

FROM THE MINUTES OF THE FEBRUARY MEETING--

One of the three new members introduced was Mr. Masao Tabakotani, recently assigned to duty in the U. S. by his employer, Mitsubishi International. He is a member of the Northern Japan Shell Club, which has a roster of 500. Mr. Tabakotani said that he hopes to serve as a bridge between the clubs.

The first presentation, by President Frank Nelson, was a showing of slide photos of living nudibranchs. They were made by Aaron Norman, a nature writer who is a friend of Frank's. An introductory visual aid was a chart, made by Frank, showing the place of the nudibranchs in the taxonomic arrangement of mollusks. It included a diagrammatic drawing of the visible anatomic structure. Frank noted that these creatures are so delicate, physically, that photographs of them are accepted as type specimens. The pictures of the startingly beautiful subjects were followed by a few made of living cowries and Cyphoma gibbosum, and one of an octopus resident in the Marine Biological Laboratory of the U. of Miami, that is said to have unscrewed a jar top in order to get to a crab.

The second speaker, Mart Hulswit, described a family vacation and collecting trip to Jamaica. He introduced his slides by saying that he takes more pictures of shells than of his children. His family did appear, however, against scenery representing both the north and south shores, and places between. Then the shells took over, some in close-up and some in groups by locality.

Publication received: NEW SPECIES OF MARINE MOLLUSKS FROM PITCAIRN ISLAND AND THE MARQUESAS by Harold A. Rehder and Barry R. Wilson, 1975 Smithsonian Contributions to Zoology, number 203, 4 & 16 pp., 8 figs. plus 1 color plate. New are: Cypraea kingae, Phenacovolva carneopicta, Chicoreus (Chicomurex) venustulus, Fusinus galatheae bountyi, Ziba cernohorskyi (family Mitridae), and Conus marielae. The paper is preceeded by a brief biographical sketch of Mrs. Mariel King associate in malacology at the Bernice P. Bishop Museum.

SEASHELLS, Shells of the seven seas in full color, by R. Tucker Abbott. 159 pp., over 160 color photographs. A Bantam Book (Ridge Press) 1976. Paperbound, $1.95.

This is a little book of color and charm. The excellent photographs include rare, beautiful, curious, and more common species. Each plate is accompanied by several lines of commentary on the pictured species (or its genus), the remarks ranging from the biological to the historical. Many of the photographs are by the author. Even more are by NYSC's talented Alice Barlow.

There are about three dozen photographs of the living mollusk. All are of interest but among the outstanding are those of Argonauta argo Linné by Neville Coleman (p. 6), of Cancellaria cooperi Gabb by Dave Mulliner (p. 105), and of Amoria ellioti Sowerby by Max Marrow (p.103). There is also the first picture this writer has seen of the living Conus gloriamaris Chemnitz, photographed by Keith Gillett (p.109).

Introductory pages touch on the study of shells, the mollusks, their classes, feeding, reproduction, nomenclature, and habitats.

The book is an excellent introduction to the beauty and interest of shells and a pleasant addition to anyone's library, whether or not the buyer is a collector of shells.

D. Raeihle

ON THALA FLORIDANA. "Thala floridana (Dall, 1883) is a small, inconspicuous brown snail common in shallow, protected bays of the Florida Keys but relatively uncommon elsewhere." This is the lead sentence of a superb article on this species by Virginia O. Maes of the Academy of Natural Sciences of Philadelphia and Dorothy Raeihle of our Club. (15(1) Malacologia 43-67, 1975). This thorough, wide-ranging, magnificently illustrated article reveals much about the species that was not known before. It was formerly thought to belong to the family Mitridae, but this study shows it to be, anatomically and otherwise, a member of the Vexillidae, a family not closely allied to the Mitridae. This paper was stimulated by Mrs. Raeihle's report in the AMU Bulletin for 1968 that she had observed Thala in her small aquarium stinging its prey before feeding. This un-mitrid-like behavior aroused the interest of Mrs. Maes and others and this study resulted. The poison, injected by an apparatus unlike that of Conus, is very powerful and can subdue prey up to 44 times the bulk of the predator. In every respect this is a model study of a species; many more such on other species are needed. One special statement in the article caught our attention: namely that "well-fed young individuals grew stronger, more widely spaced axial cords." How many "subspecies" and even "species" have been -- and unfortunately still are being set aside on just such a characteristic!

MKJ

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ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MAY 9, 1976, at 2:00 P.M.

PROGRAM: TYPE SPECIMENS OF MUREX (with color slides)
By Ken Sanger

COLLECTING IN WEST AFRICA (with color slides)
By Phil Clover

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ANNOUNCEMENTS

AMERICAN CONES will be William E. Old's subject for the main presentation of the June 13th meeting.

Beginning with this issue these NOTES will be printed by offset, a method of printing which will permit us to have selected photographs. The reproduction of photographs and fine line drawings will thus enlarge the scope of our paper.

To ease some of the additional expense, we are applying for a mailing permit to give us the special rate available to non-profit organizations. As delivery of this class of mail is sometimes delayed, we plan to announce in each issue the programs for the following two months.

Stanford University Press announces the forthcoming publication, expected in June, of MUREX SHELLS OF THE WORLD, An Illustrated Guide to the Muricidae, by George E. Radwin and Anthony D'Attilio. The announcement reads: "To amateur collectors and professional malacologists, this monumental work offers the first reliable taxonomic treatment of these beautiful and bizarre mollusks since 1880. 456 specimens illustrated in color, 194 line drawings. About 350 pp. About $25.00."

THE BEST OF THE NAUTILUS, A Bicentennial Anthology of American Conchology, is announced by American Malacologists, Publishers, P.O. Box 4208, Greenville, Delaware 19807, and described as a "288-page book replete with conchological lore, quaint ads, and charming accounts of shell collecting in pioneer America." Selected articles from the first 40 years of NAUTILUS. Regular library edition $13.95.

LETTER FROM DR. CHARLES PETTITT OF THE UNIVERSITY OF MANCHESTER:

Feb. 24, 1976

Dear Editor,

I was most interested to read the note in NYSCN 217 about the _Nucella_ bored shells of Littorina collected by Mr. and Mrs. Taxson. As far as I am aware, this is only the second published record of _Nucella_ (or on a carnivorous mollusc) drilling littorines in this way. The enclosed extract from a recent paper of mine (A Review of the Predators of _Littorina_, Especially Those of _L. saxatilis_ (Olivi). 28 Journal of Conchology 343-347 (1975)) summarizes our present knowledge of the predation of carnivorous molluscs on winkles.

> "The most important molluscan predator of North Atlantic littorines appears to be _Nucella lapillus_. Colton (1916) noted _Nucella_ feeding on periwinkles in Maine, USA by drilling the shell; another method of attack was observed by Dr. J. Iles (personal communication) who has seen _Nucella_ feeding on _L. saxatilis_ by inserting its proboscis under the operculum of the littorine. Riser (1969) found several whelks, (_Colus stimpsoni_ (Mörch), feeding on _L. littorea_ on eelgrass beds at Edmunds, Maine. The periwinkle was enveloped by the foot of the whelk, aperture to aperture; in all observed feedings, the proboscis was inserted between the operculum and columella and all living parts of the prey were ingested.
>
> The shells of the animals attacked in this latter fashion presumably would bear no distinguishing marks and therefore the frequency of drilled shells cannot be used to establish the level of predation pressure, even if empty _Littorina_ shells were not subject to removal by wave action. Lewis (1964) noted that the sublittoral _Nucella_, normally occupying a zone below the winkles, may move upshore with the tide to attack high littoral animals.
>
> Ankel and Christensen (1963) quoted in Cheng (1967), found the tectibranch mollusc _Odostomia scalaris_ Macgillivray feeding on _L. saxatilis_ in Danish waters."

REFERENCES

Colton, H. S. 1916. On some varieties of _Thais lapillus_ in the Mount Desert Region, a study of individual ecology. Proc. Acad. Natural Sciences, Philadelphia, pp. 440-454.

Riser, N. W. 1969. Feeding behavior of some New England marine gastropods. 82 Nautilus 112-113.

Lewis, J. R. 1964. The ecology of rocky shores, 323 pp., London.

Cheng, T. C. 1967. Marine molluscs as hosts for symbiosis. Advances in Marine Biology, vol. 5, 424 pp. London & New York.

* *

(Dr. Charles Pettitt is a Keeper of Zoology in the Museum of the University of Manchester which houses the second largest collection of mollusks in England.)

HISTORY OF MALACOLOGY TO 1825 (II)

Ducrotay de Blainville

JEAN ETIENNE GUETTARD

Guettard, a member of the Academy, seems to have been the first who set out to accomplish what Daubenton had proposed earlier but had neglected to do. In 1756, in a very lengthy memoire published in the Acts of the Academy, he made it clear that he would not overlook the animal inside the shell when setting up a classification of the mollusks. He applied his ideas superbly when he dealt with some genera of snails, sea slugs, and bubble shells (Bulées), including among others, Limax, Helix, Helicella, Cyclostoma, Purpura, Nerita, Lymnaea, Valvata (plus some non-mollusks like barnacles, etc.). In this monograph, Guettard also stated that the bivalves could be treated in the same way, but he confessed that his observations in this field were too few to reach any valid conclusions. Guettard's work undoubtedly influenced Desallier d'Argenville in the second edition of his book CONCHYLIOLOGIE which appeared in 1757, and he added a large number of unfortunately very poor figures of animals under the name of Zoomorphoses. But he made no use of them in defining his genera, something Guettard had very properly criticised in his monograph mentioned above.

MICHEL ADANSON

Adanson, one of the most skillful and influential pre-Linnean authors on mollusks, published his VOYAGE AU SENEGAL in 1757, one year before the 10th edition of Linnaeus's SYSTEMA NATURAE. His work is distinguished chiefly for the thoroughness of the generic descriptions, which of course included the animal as well as the shell. Thus, in the case of snail shells he considered the spire, the apex, the aperture, the operculum, the presence or absence of nacre, and the peristome. In the bivalves he distinguished the valves, whether equivalve or inequivalve, whether they were tightly closed or gaping; the beaks, whether they were visible or not, whether located centrally or at one end; the hinge, taking into account the number and shape of the hinge teeth and the notches into which they fit; the ligament, considering its shape and location; the muscles which vary in size and number -- with one muscle, two, or three; the nacre, whether entirely internal, whether some appears on the outer shell, or whether it is absent; the peristome which can be either barely visible, rather thin, or very thick.

In dealing with the "animals" he divided them only into clams and snails. In the snails he considered the following characteristics: the tentacles, dividing the animals into the following groups: snails without tentacles, snails with two tentacles, snails with four tentacles; shape of tentacles, cylindrical, conical, with a basal swelling; location of tentacles, at the base of the head, at the end of the head. The eyes, whether present or absent; if present, their location on the head, their location on the tentacles: at the base, at the tip. The mouth, which can be provided with two jaws without a proboscis, or with a proboscis and no jaws. The trachea or breathing pore, formed by a simple hole and located on one of the sides, or by a long tube which opens toward the back. The foot, which can have a transverse groove on the front or be without it. In the clams Adanson distinguished only four major parts: the mantle, which can be separated all around into two lobes, or divided at only one end, or forming a sac open only at the two opposite ends. The trachea or siphon, which can be single in form with one or two openings; double, as two separate tubes; or double with two fused tubes. The foot, either wanting, or not appearing on the outside, or appearing outside. The byssus, absent in some species, present in others.

Adanson described and figured the shell species which he found in Senegal and placed them in their genera, some of which are listed below: Cymbium, Pedipes, Chiton, Haliotis, Terebra, Cypraea, and others in genera with names which are no longer in use or are used in a different sense: Bulinus (Physa), Coretus (Planorbis), Lepas (Patella), Porcellana (Oliva), Yetus (Voluta), etc. The operculates included the following genera: Purpura, Strombus (=Conus), Buccinum, Purpura (including Murex), Cerithium, Vermetus, Trochus, Turbo, Natica, and Nerita.

Among the clams he included the bivalves: Ostraea, Perna (including here Mytilus, Modiolus, Pinna, and Cardita), Chama (Including Venus, Cytherea, Mactra, and Solen, Tellina, Donax, Pectunculus (including Cardium and Arca). In the multivalves he mentioned only Teredo and Pholas. (Many of these names came into use after Adanson. --Ed.)

In bringing this analysis to a close, we must note that even if this is not the first work which tried to establish the principle of shell classification based upon both animal and shell, it is the only one in which we find the method itself carefully described. All the parts are defined, named, and clearly and precisely diagnosed, so that it is easy to visualize the differences which they represent. However, it must be admitted that Adanson did not always make good use of the excellent material he had prepared. The differentiations of the genera, especially in the bivalves, are far from clear and his groups in many cases are not natural. However, it is due to him that we now recognize the similarities between Teredo and Pholas. On the other hand, it is also due to him that for a long time the chitons were erroneously listed among the patellids.

M. K. Jacobson

ARTICLE OF THE MONTH

Ophelia, Oct. 1973, 10: 141-154, carries an article entitled "The effect of temperature on the oxygen consumption and filtration rate of Chlamys (Aequipecten) opercularis (L.) (Bivalvia)," by Dr. Donald S. McLusky. He indicates that the oxygen consumption was found to be markedly affected by temperature and the time of acclimation, but that the filtration rate was affected by temperature and time of acclimation to a lesser extent (at 5° C only) than the oxygen consumption. It is suggested that the relationship between oxygen consumption and filtration rate is not a fixed relationship.

Henry Russell

AN INDEX TO THE ANNUAL BULLETIN of the American Malacological Union has been prepared by Margaret Teskey. It will sell for $6.50. Orders are being taken now by AMU Treasurer Myra Taylor, 900 Burr Road, San Antonio, Texas 78209.

AMU Newsletter, Fall, 1975

MUSEUM MUSINGS

By Twila Bratcher

During April and May of this year I had occasion to visit seven museums in Europe doing research for a monograph on the family Terebridae. Here are a few of my rambling impressions.

BRITISH MUSEUM OF NATURAL HISTORY: This is a place where a serious worker may photograph, measure, and compare a wealth of type material in peace and quiet. The only things I needed to borrow, a microscope with light and an electrical plug fitting to fit my electric strobe recharger, were cheerfully furnished. I was even allowed to work one Saturday afternoon.

LINNEAN SOCIETY: The Linnean types are kept in a vault-like walk-in bank vault. The types are in glass-fronted drawers in the vault under Linnaeus' original designation. The Terebra I was to photograph and measure for myself and some Nassarius for Walter Cernohorsky were all together with the others originally described in the Buccinidae by Linnaeus. There was a long, narrow table in the vault on which I began to assemble my photographic gear until the young man who opened the vault said, "No, not here." Then I was taken to an office and given a desk on which to work without interference. With all the security, I had half expected to have someone peering through my camera lens with me while I photographed the hallowed specimens, but that was not the case.

MUSEUM OF NATURAL HISTORY AT GENEVA: I had written to Dr. Binder asking if the museum would be closed on Saturdays and stating that we would arrive in Geneva as early as possible on Friday. He answered that the museum was indeed closed on Saturday and that he would be out of the city on Friday. He said, however, that he would return about 5:00 p.m. on Friday and would pick me up at my hotel. He did. He opened the museum for me and allowed me to work for about four and a half hours on the Lamarck and Kiener collections. He was delightfully gracious.

ZOOLOGISCH MUSEUM AMSTERDAM: I was constantly surprised by the excellent English spoken by everyone in the department. I was served tea, given reprints, and warmly welcomed and allowed to work with the collection. (Shepman's holotypes from the Siboga Expedition are there.) They apologized for the odor of the room in which the specimens were stored. I mentioned that it was nothing unusual in a room with so many specimens of mollusks. The young man said, "Oh, but this odor comes from the zebra pens outside the window." The malacological department is housed in the zoo.

SCHOOL OF MINES PARIS: Very little English is spoken there. The molluscan department is on the fourth floor -- walk up. All of the Deshayes Terebra material is together and labeled as such, - part of it covered with dust that could be from Deshayes' time (1857). None of the holotypes have been marked. I was able to isolate eight of the Deshayes' holotypes. There were other Deshayes' species among which there should have been types, but I was unable to find the actual type specimens. The director of the department was pleased to have the types isolated.

NATIONAL MUSEUM OF PARIS: When I arrived all the types I had mentioned in my letter were on a desk separated from the collection along with some Terebra specimens they wanted identified. The Museum had set up a fine, newly opened molluscan exhibit for the public in a building in the park across the street. There was an admission charge, and they were doing a brisk business. I was given a pass. In one room colored slides and motion pictures of living molluscs were being shown. In the exhibition hall was a fine and showy exhibition of worldwide shells. Around the walls were 8x10 color transparencies lighted from behind. These were mostly of Cypraea with their mantles extended and spectacular shots of nudibranchs, many of them taken by our own David Mulliner with credit given for each picture. Nice to meet you in Paris, Dave.

From: FESTIVUS, San Diego Shell Club, 1975 P.65

FROM THE MINUTES OF THE MARCH MEETING

The presence of Dorothy and George Raeihle was noted by President Frank Nelson, and applauded by the membership. This was the first meeting they had been able to attend since September. Dot and George have now completed their twentieth year with the Club.

The first speaker was Nick Katsaras, who presented a survey of the Marginellidae. This family has long been one of his special favorites. He observed that its species are to be found worldwide, and that shell lengths range from 1/16" to 5". He noted that in all his experience with the family, he has never seen a shell as small as 1/16". Beliefs as to the number of species vary widely, but Nick favors the highest total postulated, which is about 580. He is far less receptive to most of the generic partitioning that has been proposed. Many of the species, he commented, live at depths from 600 to 1200 feet, and most of the avidly sought-after ones are found off West Africa. He illustrated the attractiveness and diversity of the family with slides made by George Raeihle, Mart Hulswit, John Germer and Roger Dunn.

The second speaker, invited up from Delaware's Museum of Natural History, was Jerry Harasewych. He described a highly successful shelling trip to Mexico, following last summer's AMU meeting. The party collected almost 400 species in ten days. His slides covered not only shells, but desert flora and three (3) sunsets. His grand-finale scene, however, was the impressive spread of a peacock's tail, seen in the San Diego Zoo, and seen, for a change, from the rear.

Milton Werner, Recording Sec'y

March 30, 1976

Dear Mr. Jacobson:

I noted on page one of my New York Shell Club Notes of Feb. 1976 mention of my Newsletter - No. 1, October 1974 having turned up in your "in" tray. If you would care to bring this reference up to date, the Newsletter is no longer "free," costs $5.00 for the 6 back issues plus a subscription through 1976, has a mailing list of about 150 and goes to 25 countries outside the USA.

Sincerely,
H. K. Dugdale, Editor
Chambered Nautilus Newsletter.

THE GIANT AFRICAN SNAIL (Achatina fulica Bowditch) FOR THE TABLE

A friend from Palm Bay, Florida sends me an item from a local paper -- name and date not mentioned -- regarding the smuggling in of Achatina snails from Taiwan into Paris to take the place of the famous and desirable escargot (Helix pomatia L.). The Taiwan snail is undoubtedly Achatina fulica Bowditch. The escargot, according to the news item, sells for $7 a kilogram, Achatina for $2.35, but they have "almost the same taste." Of the 700 tons consumed in France in 1975, more than 200 tons were Achatina. This is indeed good news since it suggests a useful method of controlling this species which is considered to be a pest, often a great danger, to agriculture in the warmer regions of the world. (See NYSC NOTES No^{s} 76, 155, 197.) "If you can't fight them, join them," might be a fitting slogan.

Actually there is every reason why Achatina should be just as tasty as Helix, though, according to the article, high class restaurants refused to serve them. "I wouldn't be seen dead serving an Achatina to my clients," said the chef of a well known Paris restaurant specializing in snails. However, Japanese soldiers consumed them in quantity and introduced them in the conquered areas during the late war, one of the reasons for the rapid spread of this species in the Pacific islands. Still, there are other people who are less enthusiastic about them. Dr. Albert R. Mead of the University of Arizona in his authoritative, highly informative, and endlessly entertaining book THE GIANT AFRICAN SNAIL (Univ. of Chicago Press, 1961), reports that when he asked a Truk islander if he'd like to eat an Achatina, got the following response: "... no verbal answer was given. Instead he indulged in a loud, protracted, agonizing demonstration of intense reverse peristalsis that left the interrogator weak, convinced, and without appetite." Dr. Mead also tried eating a dish of Achatina stew prepared by himself and his friend Yoshio Kondo in Chichi Jima. When the human experimenters failed miserably in the test, they tried the dish on the "omnivorous dog, Patty." "She dashed to her dish in great anticipation, when with her right paw cautiously curled under her, she took one sniff, backed off, and retreated to the far corner to sulk." However, Dr. Mead cites an author who recommended the "Achatschnecke" as fit for human consumption. He offered some recipes for dishes that, according to Dr. Mead, "all seemed to have two things in common, viz., a pound of butter and half the spice cupboard. Almost anything would be acceptable with its own flavor so effectively disguised."

Nevertheless, the news item above mentioned clearly indicates that, properly prepared, Achatina is acceptable to a large part of the gourmet population of France. Thus it may well be that what used to be considered a menace to mankind, may turn out to be a highly desirable additional source of ever scarcer proteins.

mkj

NEWLY INTRODUCED CARIBBEAN NAMES

The following new names were recently introduced by Dra. Hortensia Sarasúa in the Cuban publication 140 POEYANA 1-15, 1975: Esbelta, new subgenus, type Colubraria (Esbelta) cubapatriae (Buccinidae); Pusia splendidula (Mitridae), Thelecythara borroi (Turridae); Turrijaumelia, new genus, type Turrijaumelia jaumei (Turridae).

mkj

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NEXT MEETING: SUNDAY, JUNE 13, 1976, at 2:00 P.M.

PROGRAM: LIVING SPECIES OF NEW WORLD CONUS
By William E. Old (with color slides)

ANNUAL ELECTIONS

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MRS. JOHN BOGART

We are sorry to report the death, suddenly on May 4th, of our member Marjorie Bogart. Mrs. Bogart was a field collector and student, and a volunteer worker at the American Museum of Natural History for approximately twenty years. She has been with the New York Shell Club steadily since she joined us in 1958.

Our deepest sympathy is extended to her husband and son.

FIELD TRIP ?

At our May meeting the possibility was discussed of a field trip by chartered bus to an area for fossil and land shell collecting followed by an excursion to the Catskill Game Farm. If approved, details will be supplied at the June 13th meeting.

For those devoted to marine shelling we find no ideal forecast combining a minus tide occurring mid-day on a weekend. The best weekend forecasts are, for Orient Beach State Park: (Saturdays) June 5, low tide 0.1, 10:45 a.m.; July 10, low tide -0.1, 3:46 p.m.; August 7, low tide 0.0, 2:42 p.m.; August 21, low tide 0.4, 1:45 p.m.

Forecasts on Sandy Hook: (Saturdays) June 12, low tide -0.5, 2:47 p.m.; July 24, low tide 0.3, 12:28 noon; August 7, low tide 0.0, 12:31 noon; September 25, low tide -0.9, 3:52 p.m. For the south shore of Long Island, adjust time for earlier to the east, later in the bays. For Sunday of each of the above weekends, add about an hour.

CAECUM, FIND-UM

Cherita Stark

I wonder whether Karl Jacobson has any idea of the way his book SHELLS OF THE NEW YORK CITY AREA (written with Dr. William K. Emerson) has affected the lives of us mortals. Back in 1965 I was a fairly new sheller. As I looked through my new book's descriptive paragraphs and clear drawings (by Tony D'Attilio) it seemed like a reasonable goal to collect one of each of the local marine species. There weren't very many, and some of them already looked somewhat familiar. Since then, this goal has remained a kind of game for me. "After all," I always felt, "if a species is in Karl's book, then it's out there - somewhere - in this area. All I have to do is keep looking hard."

One early incident furthered this delusion. In May 1967 my husband Ernie and I decided to spend a weekend near Montauk, at the eastern tip of Long Island. Before leaving home I studied my shell book carefully and read that Periploma leanum Conrad (Lea's Spoon Clam) is "sometimes found.....at Hither Hills Park." As we drove along the Montauk Highway, I voted to stop off and inspect the beach. It was a grey cold day and we were the only ones there. I was disappointed to see that very little shell material had washed up, but after only a few minutes of walking along the tide line I picked up a small oval white bivalve. It looked like the picture in the book! The shell was dead but complete with both valves. I was very pleased, but not surprised. After all, the book had told me it would be there! Now I could 'check off' another local species. Since that lucky day I've shelled the same Hither Hills beach and adjacent beaches at Amagansett and Montauk at least a dozen times. Never again have I seen so much as a single valve of Periploma leanum!

The search continued whenever I was at a shoreline. There was delightful pleasure as each NEW one was discovered over the years -- Pandora gouldiana Dall (Gould's Pandora) and Nucula proxima Say (Nut Clam) near the Shelter Island Ferry slip at North Haven; Corbula contracta Say (Contracted Box Clam) at Towd Point; one lonely Mysella planulata Stimpson (Flat Lepton) among hundreds of Gemma gemma Totten (Gem Clam) at Westhampton Beach (bay side); Colus islandicus Gmelin (Iceland Colus) on a sub-freezing Christmas Eve at Ditch Plains - a real "red letter day"; twelve and a half Caecum pulchellum Stimpson (Beautiful Little Caecum) sifted and magnified out of a pailful of sand and shell grit from the shore of Peconic Bay; live Acmaea testudinalis fergusoni Wheat (Atlantic Plate Limpet) on a small rock at Lake Montauk; live Solemya velum Say (Awning Clam) at Orient Beach; live Haminoea solitaria Say (Fragile Bubble Shell) at Bird Island off East Moriches; and the wonderful 'tinys': Seila adamsi H. C. Lea, Mangelia plicosa C. B. Adams, Turbonilla and Odostomia species found in the high tide drift.

Still eluding me are some that 'should' already have been found! Where are all the live Lyonsia hyalina Conrad (Glassy Lyonsia)? I've tried all the "lovely crescent-shaped beaches" I could find near Southold (Dorothy Jensen, NYSC NOTES No. 97 Dec. 1963). Where are the Chaetopleura apiculata Say (Pill Bug Chiton) - (I seem to pick up all the wrong rocks at Orient Beach State Park).....the Argopecten magellanicus Gmelin (Ocean Scallop) stranded on the beach after winter storms? Must I really look into codfish stomachs for Venericardia borealis Conrad (Cod Clam)? How many thousand Astarte castanea Say (Smooth Astarte) will I stare at before I find a single valve of Astarte undata Gould (Waved Astarte)? How is it that the Siliqua costata Say (Fragile Razor Clam) wash up at Dot and George Raeihle's feet and never at mine? Where is that tiny left-handed Trifora perversa nigrocincta C. B. Adams that has never been among the Retusa canaliculata Say (Channeled Bubble Shell), Cylichna oryza Totten (Minute Bubble Shell) and Rictaxis punctostriatus C. B. Adams (Punctured-line Bubble Shell)? The search - and the game - goes on.

And now I can look forward to collecting the additional marine species described in the revised edition (1971) of my favorite reference book, now entitled SHELLS FROM CAPE COD TO CAPE MAY.

FROM THE MINUTES OF THE APRIL MEETING

The Broadway Dance Studio, in Queens, was again the scene of the annual social meeting through the courtesy of our member Dorothy Jensen. The program consisted of a brief business meeting, a three-part slide presentation, the annual shell auction, periods of indecision and decision at the bargain table, and animated socializing over cocktails and punch, and later a fine buffet supper. Along the way, a raffle brought the lucky winner a copy of "What Shell is That?" by Neville Coleman, and three other fortunates won door prizes: a sport shirt decorated with shell pictures, three large shell photos, and two etchings of shells made by member Adele Reimann.

The theme of the slide triptych was "How to Put Together a Slide Show." In the first segment, George Raeihle explained the basics of the high-magnification photography that help to make his slide presentations so spectacular. His pictures included not only examples of extreme close-ups of shells, living specimens, egg cases, etc., but also of the equipment he uses.

Bob Janowsky then discussed, as a comparative beginner, how he became a proficient shell photographer by experimenting. He illustrated his trials of various color backgrounds and lighting plans. To stress the pitfalls, he showed, among his excellent results, a few failures - like the study of a Cypraea aurantium that includes the shadows of the shell support, the camera, and Bob's hand. He favors raising the shell off its background on a hidden support, and advises, "Fill the frame with the shell." He also asserted, "If I can do it, you can do it."

Frank Nelson then spoke on organizing your slides to tell the story you have to tell. His example was a series of slides, some made by member John Lyons and some commercial, blended to show the progress of the recent volcanic eruption on the Island of Heimaey, and the partial burial of the town in lava and ash, plus another series showing the creation of the island of Surtsey by volcanic eruption. Frank also illustrated some of his favorite tactics in shell photography, one being the creation of a background by stretching fabric in an embroidery hoop. This, in turn, permits lighting from below. He also sometimes uses transillumination in photographing maps. His last slides showed the value of including data cards in shell photos, and of alternating these with pictures of the collecting areas.

The auction was again conducted by Bill Old, in his informative and lively style. Among the cream of the offerings, all donated by members and friends, were Columbarium spinicinctum, the Murexes pazi, palmarosae, and bipinnatus, Conus hirasei, Pecten nodosus, Cypraea teulerei and C. caputdraconis. The outstanding item was a selection of thirty fine shells display-mounted in a box. A brass plaque identified this as having originally been a recognition award presented by President Marcos of the Philippines.

Milton Werner, Rec. Sec'y

HISTORY OF MALACOLOGY TO 1825 (III)

Ducrotay de Blainville

GEOFFROY SAINT-HILAIRE

Another French naturalist to whom the science of malacology is indebted for pursuing the principles proposed by Guettard and so well supported by Adanson, is Geoffroy the Physician of Paris. In his TRAITE DE COQUILLES TERRESTRES ET FLUVIATILES DES ENVIRONS DE PARIS, published in 1766, the animals are also carefully treated. The small number of generic characteristics he cited were taken from the animal as well as from the shell. He mentioned only five univalve genera, only one of which, Ancylus, is new, a name now adopted. Although he treated almost all the genera of Guettard -- Cochlea, Buccinum (see below -Ed.), Planorbis, Nerita -- he was not always successful in delimiting them. Especially confusing is his treatment of the genus Nerita into which he placed the terrestrial cyclostomes, the aquatic cyclostomes, the feather-bearers (Valvata ? -Ed.) and the true nerites. The only bivalve genera he dealt with are Mytilus and Chama. In the latter he placed the freshwater cyclids (Sphaerium -Ed.) and in the former, Anodonta and an Unio.

OTHO FREDERIC MÜLLER

Müller, the celebrated Danish author, was the first non-French zoologist to adopt the principle of animal plus shell in his History of the Terrestrial and Fluviatile Vermes. But as a whole he introduced no new ideas into malacology. His system of classification, although more complete than Geoffroy's, since he dealt with all shell bearing mollusks, is scarcely a natural system and quite inferior to Adanson's. He accepted the primary division of uni-, bi-, and multivalves, which he called families, and divided the univalves into three sections: 1) the univalves which have holes on either end, to include the sea urchins and the dentaliums; 2) the univalves which have a large aperture, to include the genera Akera, corresponding to the bullids of modern zoologists, Argonauta, Bulla (=Physa of Draparnaud), Buccinum (now Lymnaea), Carychium, Vertigo -- all of which have been adopted; Turbo (sic! -Ed.), Helix, Planorbis, Ancylus, Patella, and Haliotis; and 3) the operculate univalves to include Tritonium (=Buccinum of Linnaeus), Trochus, Nerita, Valvata, the last of which has also been adopted, and Serpula, probably because it has a vermes-like animal as suggested by Adanson.

Müller divided the bivalve shells into only two sections: those with hinge teeth and those without. In the first section he placed only one new genus, Terebratula (a brachiopod -Ed.) and in the second section, two, Anomia and Pecten, the second of which he had separated from Ostrea. The multivalves took in the genera Chiton, Pholas, and Lepas (a barnacle -Ed.).

Thus it is easy to see that, although Müller included some characteristics of the animal in his generic descriptions, he added nothing new to the natural classification of the malacozoa which preceded his work, except for a few good genera which have since been adopted.

REVIEW:

SEASHELL IDENTIFIER

by Sonia B. Murray, Sterling Publishing Co., 240 pp., 330 figs. $6.95

This small book deals with about 325 species of what purport to be the common beach shells of "the coasts of America." Each species is well described and most are nicely illustrated in color. Occasional paragraphs deal with small items taken from the world of shells. In order to make her selection from the huge number of shallow water species which inhabit all the coasts of our country, the author had to chop away rather wildly and omit a large number of very common species, including all the smaller and microscopic shells which frequently are the most interesting ones even a casual collector meets. In short, this is a very brief sampling of our very rich shallow water and coastal fauna. The identifications and nomenclature, verified by William Old of the American Museum of Natural History, are reliable.

mkj

REVIEW:

GUIDE TO SHELLS

by A. P. H. Oliver, A Demeter Press Book, Quadrangle, 320 pp., illustrated in color, hard cover, $9.95.

This is another in the long list of shell books that have appeared recently. It purports to describe and illustrate in most satisfactory color, the world-wide sea shells that are most likely to attract the attention of the average shell collector. The descriptions are clear and are considerably aided by the color illustrations of the shell which appear opposite each description. Only the zoological or scientific name is given -- together with the author of the species and the date -- and no attempt is made to provide common -- or better, English -- names. Almost all the species described are marine prosobranchs; one page is given to the opisthobranchs, 6 pages to marine bivalves, and only one to the other five molluscan classes. Land and freshwater shells are not mentioned. In brief, this is a satisfactory, well illustrated catalog of the marine shells which the author, whose tastes he believes are fairly typical of the average collector, should most like to see illustrated.

mkj

ANNOUNCEMENT:

THE AMERICAN MUSEUM OF NATURAL HISTORY GUIDE TO SHELLS:
Land, Freshwater, and Marine, from Nova Scotia to Florida
by William K. Emerson and Morris K. Jacobson

Publication date May 19, Knopf, New York. 512 pp., more than 1,000 illustrations. Price: Hard cover $17.50, Paperback $8.95. Look for it soon. We'll have a review in our next issue.

REVIEW:

THE BEST OF THE NAUTILUS

Edited by R. Tucker Abbott, published by AMERICAN MALACOLOGISTS, 280 pp., color frontispiece. Library edition $13.95.

When I first became interested in shells years and years ago, my favorite occupation was to visit the library of the American Museum of Natural History and one by one go through all the volumes of NAUTILUS stored there. I spent many beguiling hours mulling over the treasure house of entertainment and information I found in those pages.

Now Dr. Abbott has assembled, as a Bicentennial Anthology of American Malacology, the best and most interesting of these articles in a handsome, well bound volume. Thus in an easily available form it is now possible for the reader to gain, among other things, fascinating pictures of the state of our hobby when it was first beginning to spread in our country, and when collectors had virgin, unexplored territories to visit for shells.

The articles are arranged in sections dealing with the Atlantic coast, the Pacific coast, land shells, freshwater shells, pearly river mussels, and adventures in collecting abroad. A special section is devoted to interesting short space fillers, detected by the alert eye of editor H. A. Pilsbry who started his career as a newspaper proofreader. Here we find amusing items of "newspaper conchology" such as the discovery of a 19 inch long Bulimulus snail in Florida, of a local snail that climbs trees and "grows delicately fat on young birds," on the Atlantic City cop who was felled by a clam dropped on his head by a sea gull, and many many more. The section of land shell articles contains accounts of the first collecting trips to the Far West, and to the Great Smokies, probably the single richest area for land shells in the country. Fascinating also are the accounts of the personal adventures of the first collectors on the bewilderingly rich West Coast and the shores of Florida.

An important chapter is devoted to the obituaries of people famous in the early days of American conchology, and the reproduction of some early advertisements are as interesting as the reprinted old Sears-Roebuck catalogues. It is useless to try to outline even briefly all the riches of this captivating volume. It clearly belongs in the library of every shell enthusiast who is more than a mere accumulator of specimens and who is interested in learning much more about the field that has caught his interest.

Unfortunately, the book has no index.

mkj

ARTICLE OF THE MONTH

A large reduction in the population numbers of the sea ducks of the three species of scoters - common, surf, and white-winged - off the coast of New Hampshire led Drs. Jonathan Houfler and Matthew Robus to investigate the possible causes. The results of the study published in the New Hampshire Audubon Quarterly, vol. 26 (4), Fall 1973, seemed to indicate that the scoters feed on shellfish, particularly razor clams - these in turn feed on dinoflagellates that could produce a lethal dose, for the ducks, of paralytic shellfish poison. Scoter carcasses, washed up on shore, were found to have been killed by this poison, thus implicating the shellfish in the kill offs. This is the "red tide - scoter mortality theory."

Henry D. Russell

From SCIENCE - Vol. 15, No. 9, Dec. 1975:

Red tides in Florida and perhaps elsewhere are caused by the dinoflagellate *Gymnodinium breve*. This fragile organism poisons fish with a toxic substance, when it dies; biodegradation also uses up oxygen necessary for other sea creatures.

A type of blue-green algae which kills this organism has recently been discovered by Deam Martin, a University of South Florida chemist, and graduate student of Dr. David Eng-Wilmot. *Gomphosphaeria aponina*, they told a recent combined Southeast-Southwest regional meeting of the American Chemical Society, secretes the chemical aponin, which is toxic to *G. breve*. But much more must be learned about the nature of the toxin and its action before any use could be contemplated to stem the red tide in Florida.

Contributed by M. Weingartner

FOR BAGGING BIVALVES

Next time at the supermarket look closely at the plastic mesh bag in which, chances are, your oranges are packaged. This mesh is a product called VEXAR, produced by DuPont. It has found numerous important uses in such disparate fields as seaweed growing, kidney dialysis, soil erosion control, catfish farming, and lobster fishing. But of chief interest to us is its use in clam and oyster culture. The young bivalves are placed in such Vexar bags and deposited in regions where they grow best, even in polluted water. But before marketing, these bivalves have to be transported to clean water to purify their bodies and make them fit for human consumption. Here's where the Vexar bags come in. Instead of laboriously collecting and transporting a loose crop of shellfish, the already "packaged" crop is easily, quickly, and inexpensively lifted out and moved. Another benefit is that in the bags the bivalves are relatively free from attack by drills and especially starfish.

Submitted by Walter Jacobs
Source: DUPONT MAGAZINE, Jan.-Feb. 1976

NOTES FOR A HISTORY OF MALACOLOGY IN NEW YORK

In the 1850's, well known collectors and professional malacologists lived at the following addresses in New York City:

Thomas Bland at 7 Old Slip and 26 Burling Slip.
Charles Wheatley at 323 Grand Street.
R. A. Stuart (Stewart?) at 167 Chambers Street.
W. A. Haines (whose collection is now in the American Museum) at 60 Murray Street and 31 Nassau Street.

mkj

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FOUNDED JAN. 1949

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, SEPTEMBER 12, 1976, at 2:00 PM

PROGRAM: To be announced.

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ANNUAL ELECTIONS

The members present at the June 13th meeting expressed their thanks both to the retiring officers, President Frank Nelson and Corresponding Secretary Dorothy Janowsky, and to those incumbents who agreed to serve us still another term: Treasurer Mathilde Weingartner, Recording Secretary Milton Werner, and Historian Nick Katsaras.

Voted into office and also thanked with applause were the new officers, President Veronica Parker Johns, Vice President William R. Walkwitz, and Corresponding Secretary Monique Caubere. Accepting the appointment as directors were Robert Janowsky, Kenneth Sanger, Al Scarpetti, and Sol Weiss. Karl Jacobson will continue as editor of these NOTES.

NEW DUES

Other business of the June meeting was a serious discussion of our finances resulting in members suggesting and voting for a raise in dues to $5.50 per year for full membership and $4.00 per year for corresponding members, to be effective in September. The dues for additional members of a family remain at $1.50 per year.

AMU 1976

We hope that many of you are planning to attend the 42nd meeting of the American Malacological Union to be held in Columbus August 2 - 6. There will be a full and interesting schedule.

Fees: Registration $10.00, Banquet $7.50, Air-conditioned dormitory $11.00 single, $15.00 double. For other information write to AMU '76, Museum of Zoology, The Ohio State University, 1813 North High Street, Columbus, Ohio 43210.

OCEANS FESTIVAL

Several of our members visited the Oceans Festival held June 12 - 20 on the grounds of the New York Aquarium. We zig-zagged between the carnival-type booths to find the main tent, wherein we passed more stands of miscellaneous materials before coming to the aisle of our interest. First was the exhibit by SPOOF (The Society for the Protection Of Old Fishes) and the Seattle Aquarium. Here the American Museum of Natural History had on display their rare and remarkable specimens of adult and unborn coelacanth, Latimeria chalumnae J. L. B. Smith, a fish thought to have been extinct for 60 to 70 million years until trawled from deep water in 1938. Further along we came to the booth of the Delaware Museum of Natural History, manned by volunteers from local shell clubs. The main exhibit was a display assembled and donated by Neil Hepler entitled "Predators of the American Oyster," emphasizing Urosalpinx cinerea, the common Oyster Drill, its life cycle and habits, and citing the work of Dr. Melbourne R. Carriker. Other booths that caught our attention were those of the American Littoral Society, U. S. Coast Guard, Sierra Club, Underwater Society of America, Brooklyn Divers, U. S. Fisheries, and the Bell Telephone Company.

dr

FROM THE MINUTES OF THE MAY MEETING

The first speaker of the afternoon was our member Ken Sanger, who reported on work he has done in trying to make order out of the families, subfamilies, genera and subgenera of Muricidae. The difficulty of this task is indicated by the fact that there is no existing literature that provides a good start. He attempted to compile a tabulation of items of description of the various genera and subgenera but gave up when it became obvious that there were too many differences, from species to species, and too few similarities. In the course of his work, he photographed a number of shells in the American Museum, and was given other photos by Emily Vokes. He showed slides of shells in the genera Murex, Chicoreus, Hexaplex, Pterynotus, Poirieria, Aspella, Dermomurex, Calotrophon and several others, describing points of similarity and difference. In each case he showed a picture of a specimen of the type-species of the genus or the subgenus, thus making the ideas of the authors of these taxa clearer. He used a second projector for a simultaneous display of the listings of genera, subgenera and species.

Our guest speaker was Phil Clover, who was in New York on his way from California to West Africa, where he will do some collecting. He first showed slides made three years ago in Ethiopia, mixing scenic and shell photos. He then showed slides made in Panama, some of a lock and its controls, and others of Taboga Island, on the Pacific side, where he collected. He ended with slides showing the amazing variation within species of West African Conus. He feels that there may be only ten valid species in this locale, despite all the highly active splitting.

Milton Werner, Rec. Sec'y

It has been proposed that we have a field trip in the fall to a fossiling area in New York State followed by a visit to the Catskill Game Farm. Please let us have your response.

LIFE HISTORY OF MUSSEL AND OYSTER CRABS

John B. Pearce
Middle Atlantic Coastal Fisheries Center
Sandy Hook Laboratory
Highlands, New Jersey 07732

Many individuals involved with collecting bivalve molluscs for human consumption, research, or for shell collections have found tiny crabs, often referred to as pea crabs, inside certain bivalves. Species of pea crabs are found throughout the world and have, through long periods of evolutionary history, evolved a relationship with many major groups of invertebrates having body cavities of sufficient size to accommodate the crabs. For instance, in addition to bivalves, the tunicates or sea squirts often have specific species of crabs living with them. The cloaca of large sea cucumbers, particularly those found in the Pacific, often provide a refuge for the small crabs.

Because of the symbiotic relationship between these crabs and their various hosts, the crabs have become greatly modified when compared with free-living crabs such as the Dungeness, blue, green and mud crabs. Generally, the adult pea crab does not exceed one centimeter in body width and the adults of many species are often even smaller. Also, the hard outer shell or exoskeleton of pea crabs is, in most instances, not well-hardened although there are important exceptions to this general rule.

It was once understood that the adult, female pea crab living inside a mussel or oyster would carry her eggs for a period of time; when the eggs hatched into the first larval stage the larvae would swim free from the host and enter open waters. It was thought that the small larvae eventually returned to a host clam, mussel or oyster and would continue their development to the definitive adult stage. Early investigators believed that male crabs would leave the host and move from bivalve to bivalve seeking an adult female to copulate with. The female would then eventually spawn her eggs and hold them until hatching, thus the life cycle would be repeated.

My work with the west coast mussel crab, _Fabia subquadrata_, revealed that this was not the true life history of this species of pea crab. What I found was that the female living in a bivalve host, the horse mussel, _Modiolus modiolus_, does spawn her eggs which develop into free-swimming larvae; usually there are four or five planktonic larval stages which culminate in a tiny crab-like animal called the megalopa. At this point the crab larvae leave the water column where they spent their early existence and return to the benthic environment finding new bivalve hosts in which to live. Generally, the tiny crabs selected a small mussel 1 - 1.5 cm in length. As the host mussel grew in size so did the crab. Generally, the crab passed through three or four additional molts. Each new molt, or instar, looked very much like the previous one; all of these early molts inside the host culminated in a tiny definitive crab having a soft exoskeleton and round walking legs. Eventually, however, an instar developed which had a very hard, well-calcified exoskeleton completely unlike any of the preceding instars. In addition, the walking legs were flattened and oar-like and the lateral margins had long setae. This makes this crab instar an extremely efficient swimmer.

At this point both the males and females left their mussel host and swam for a period of time in the water column. When a male found a female he copulated with her and the female then carried the sperm in tiny pouches or seminal receptacles. Once fertilized, the female returned again to a bivalve host, usually a mussel. The hard female instar again molted into a soft form having cylindrical legs and there were several subsequent molts or instars having this general confirmation. The narrow abdomen of the young, post-hard, female crab widened with each molt until it formed a well-developed cavity in which to carry eggs protected between the abdomen and the thorax or body. As the eggs are spawned they are fertilized by sperm deposited in the receptacles during the free-swimming stage. Eventually the eggs hatch and the entire life history repeats itself.

These findings were made in Puget Sound in the late 1960's. Later I had an opportunity to work at the Woods Hole Laboratory on Cape Cod for a period of two years. While at Woods Hole I decided to investigate the east coast mussel crab, Pinnotheres maculatus. This crab appeared to have a very similar life history when compared with the west coast mussel crab. After investigating the crab for a period of 18 months I determined that, indeed, it had an almost identical complex life history, emphasized by the hard, swarming instar with paddle-like legs.

Most species of pea or pinnotherid crabs have a single, well-defined host. While juvenile crabs may be found in other hosts, generally the adults are found only with the definitive host. The east coast mussel crab, however, was found to occupy a geographic range extending from north of Cape Cod south to Florida and beyond. I also found that this crab, in addition to infecting the definitive mussel host, Mytilus edulis, was also found with the pen shell, Atrina, and species of scallop.

The life history of the oyster crab, Pinnotheres ostreum, is not completely understood at the present time although it is suspected that it may be similar to those of Fabia subquadrata and Pinnotheres maculatus. This crab, like other pinnotherids, is a true parasite often causing extensive damage to individual host oysters. Their presence has been noted to significantly reduce the meat yields of heavily infested oyster beds. The study and understanding of pinnotherid crabs therefore is extremely important in developing and managing shellfish fisheries.

I am continuing my study of the family Pinnotheridae and would appreciate it if any conchologists or malacologists finding molluscan hosts containing pea crabs would contact me and provide me with information on the location and hosts of the crabs. The small crabs preserve quite well in rubbing (isopropyl) alcohol; when crabs are found if they could be placed in tiny medicine jars with alcohol and the collection location, and sent to me, the specimens would be of use in furthering our knowledge about this important group.

While it was once assumed that the pea crabs were true commensals, i.e. while living in a host they did not damage the host but simply used some of the food collected by the host, it is now known that these tiny crabs are parasitic and can cause considerable damage to the host, be it mussel, oyster or tunicate. Knowledge about pea crabs is, therefore, of importance in the management of mussel populations and oyster reefs. Individuals that would like to read more about this group can find details of three species in the following papers:

Christensen, A. and J. McDermott. 1958. Life-history and biology of the oyster crab, Pinnotheres ostreum Say. Biol. Bull. 114:146-179.

Pearce, J. B. 1966. The biology of the mussel crab, Fabia subquadrata, from the waters of the San Juan Archipelago, Washington. Pacific Sci. 20(1):3-35.

Pearce, J. B. 1966. On Pinnixa faba and Pinnixa littoralis (Decapoda: Pinnotheridae) symbiotic with the clam, Tresus capax (Pelecypoda: Mactridae). Some Contemporary Studies in Marine Science, H. Barnes (Ed.). George Allen and Unwin Ltd., London. pp. 565-589.

MORE ON ACHATINA FULICA AS AN ITEM OF DIET

April 27, 1976

Dear Morris:

This morning I took a little while to peruse the articles in the recent N.Y. Shell Club News (No. 221). It is always a pleasant experience and I glean information that is both stimulating and pleasant to learn.

The article on p. 7 dealing with Achatina fulica was of special interest since we have not really gotten the last word on that involved and serious problem! The health problem, along with those relating to agriculture, should not be overlooked! When Dr. Curt Schneider and I were in SE Asia working with the problems relating to the construction of the large dams in the Mekong drainage we saw in NE Thailand a very serious development by way of brain lesions in people eating poorly cooked Pila and other local snails. Then when we went to Phnom Penh and saw the agricultural work at the Prek Thnot dam (Where Israeli agriculture experts were teaching the Cambodians better rice and crop culture) we found there were few brain lesions due to rat lung worm since they knew how to properly cook the snails they ate!

If you will look at pp. 141-142 of the skit I wrote (*) after teaching a semester in Hawaii and looking at some of the snail problems there you will see that Rat Lung Worm has been travelling with the Achatina and represents a situation which had better not be overlooked. Since often Oriental people consume snails in the way to which they are accustomed, either as food or as materia medica, the danger will always exist. The rats are a tremendous reservoir host, so that for humans in endemic and especially newly introduced areas the health authorities may need to be made aware of such interrelations. It is not always in exotic places that we make these observations. You probably know that we have a couple of fabulously productive colonies of Helix pomatia in Michigan. When I took some of my classes to that Jackson colony we used to see many of the aestivating snails chewed leaving the calcareous epiphragm pretty much in place. While we need the evidence it is probably a good guess that the Norway rats that live on that flood plain of the Grand

River are finding a wonderful protein food to tide them through the winter season. Hence it may well be more important to assay the health relationships than the agricultural problems these African snails may pose!

Sincerely,

Van

(The above letter to Editor M. K. Jacobson from Dr. Henry van der Schalie, University of Michigan, Ann Arbor, Michigan 48104.)

(*) The Biologist, vol. 51, no. 4, pp. 136-146, November 1969.)

REVIEW:

THE AMERICAN MUSEUM OF NATURAL HISTORY GUIDE TO SHELLS:
Land, Freshwater, and Marine, from Nova Scotia to Florida

by William K. Emerson and Morris K. Jacobson, 1976. A Borzoi Book, published by Alfred A. Knopf, Inc., New York. 482 pp., index xviii; 47 photographic plates, 16 of which are in color, present more than 1,000 illustrations. Size 5¼" x 8¼". Price: paperback $8.95, hard cover $17.50.

This latest work by Emerson and Jacobson extends the range over their 1971 publication, SHELLS FROM CAPE COD TO CAPE MAY, to describe east coast shells from Nova Scotia to Florida. However, it does not include the rare, uncommon, or deep water species, but within the proscribed limitations of its pages describes 800 species of the commoner shelled mollusks, those most likely to be found by the general collector -- marine species either in situ or cast ashore, land and freshwater species of our eastern coastal plain. (Incidentally, the material on species from Cape Cod to Cape May has been rewritten and updated.) The five chapters, each with an introduction, are on (1) Marine Snails, (2) Land Snails, (3) Freshwater Shells, (4) Marine Bivalves, and (5) Other Marine Mollusks. The 47 clear photographic plates are grouped together in the center of the book.

Ordinarily shell books include very few, if any, keys. This AMNH GUIDE TO SHELLS gives us identification keys for most of the groups represented in its pages. (Instructions for use of the keys are found on pages 12-14 of the Introduction.) Common, or English, names are given along with the scientific names. The brief etymology of each scientific name is most welcome, an aid to understanding and remembering unfamiliar Latin or Greek terminology.

The text is easy and interesting reading and though the book, with its coverage limited to 800 species, may be considered a "popular" guide, it is more than simply a book for identification. the paragraph(s) of description for a species frequently includes discussion, remarks, or notes on the living animal.

Dorothy Raeihle

REVIEW:

SEA SHELLS OF THE WEST INDIES

by Michael Humfrey, Taplinger Publishing Co., New York, 351 pp., 19 text figures, 32 color plates, $19.95.

NOTE: The review of this book which appeared in No. 219 of these

NOTES (Feb. 1976) was erroneously ascribed to the present reviewer. His actual review of the book follows:

This is one of those works produced not by the author visiting museums and private collections or searching the literature for locality data. It represents, instead, the results of years of devoted collecting in a restricted, if quite extensive, territory -- the island of Jamaica in this case. The work is thus of particular value to the student of molluscan ecology as well as to the shell-lover who is planning a collecting trip to the beaches of Jamaica. These remarks refer principally to the sections under each species discussion labelled "Occurrence," where, apparently as the result of his personal experiences, the author provides clear indications of where and under what conditions the species is to be found.

For the rest, the work leans heavily on Warmke and Abbott, CARIBBEAN SEASHELLS, 1961, from which the nomenclature, much of the descriptions, and the drawings seem to be borrowed. The species names are thus often those of 15 years ago and no notice of more recent improvements in the naming are noted. The color illustrations are often quite good, if a bit garish, but more often, especially in the case of the smaller sized species, so foggy as to be unrecognizable. Many of the figures bear an unnaturally deathly bluish tinge which is never seen in live or even dead shells. The book, despite the title, deals almost entirely with shells found in Jamaica. Thus it contains some 200 fewer species than Warmke and Abbott, which purportedly also deals with the entire Caribbean or West Indian region.

Nevertheless, Humfrey's book will prove to be a valuable addition to the library of any one, student or amateur, who is especially interested in the shells of Jamaica and is seeking data on the ecology of West Indian Marine mollusks in general.

Morris K. Jacobson

HISTORY OF MALACOLOGY TO 1825 (IV)

Ducrotay de Blainville

CAROLUS LINNAEUS

Apparently Linnaeus made some important changes in his ideas concerning the systematics of the mollusks in his SYSTEMA NATURAE. In the first nine editions of his work, that is up to 1746, the last edition of which consists of only a single in-octavo volume of 236 plates, Linnaeus does not seem yet to have made use of the designation "mollusks" at all. He made two divisions of the animals which we believe belong here: he put the naked species into his order "Zoophytes" in the class Vermes, and the species with shells into his third order under the name "Testaceans."

In the first group of naked species he put only the genus Thethys (sic) in which he also included the holothurians, and in addition the genera Limax and Sepia which he placed very close to the hydra. In the second division of shell-bearing species, which he didn't even divide into univalves and bivalves, he distinguished the following genera: Patella, and Cochlea (here he placed all the turbinate univalve shells); Cypraea, Haliotis, and Nautilus, which he has since called univalves. He placed all the bivalves in Concha. However he placed the ascidians among the shell-bearing species under the name

Microcosmus. Although Linnaeus used very few characteristics to define his genera, he often cited the naked animal which he supposed belonged to the shell and which he placed in his Zoophytes. However, he appears to have done this only occasionally.

But the 10th edition, which appeared in 1758, the first volume of which deals with the Animal Kingdom, now had 821 pages. Here one finds a considerable enlargement, which becomes even greater in the 12th edition; this may be looked upon as the last word on the subject by the celebrated author. In this edition there are 1324 pages which deal with the Animal Kingdom. It was published from 1766 to 1768, thus more than 10 years after Adanson's work.

The class Vermes (worms -ed.) is divided into 5 sections. In the 2nd section, named Mollusca, there are 8 genera of true mollusks: Ascidia (tunicates -ed.), Limax, Aplysia, Doris, Thethys, Sepia, Clio, and Scyllaea. The 3rd section is almost entirely devoted to the Testacea which were now divided into multivalves and bivalves. The multivalves contained 3 genera: Chiton, Lepas (a barnacle -ed), and Pholas. The bivalves have 14 genera: Mya, Solen, Tellina, Cardium, Mactra, Donax, Venus, Spondylus, Chama, Arca, Ostrea, Anomia, Mytilus, and Pinna. Finally the 3rd division, dealing with the univalves, is divided into 2 subdivisions, depending on whether the spire is regular or irregular. The genera in this division are: Argonauta, Nautilus, Conus, Cypraea, Bulla, Voluta, Buccinum, Strombus, Murex, Trochus, Turbo, Helix, Nerita, Haliotis, Patella, and, remarkably enough, Teredo. In characterizing these genera, Linnaeus always confined himself to merely citing an analogous naked mollusk (e.g. Limax for all except Nautilus and Argonauta (Sepia) and Serpula (Teredo) -ed.). So that if Adanson's work had any influence at all upon the last edition of the SYSTEMA, it is found only in the greater number of shell genera and in their improved description. There is little influence on the treatment of the soft parts of the animal. Among the mollusks Linnaeus also listed such creatures as sea-worms, holothurians, starfish, sea urchins, and radiolarians. There are also some improper inclusions in the testaceans such as Lepas and Chiton associated with Pholas and above all Dentalium, Serpula, and Sabella included with Patella in the univalves. All of these, together with Teredo, are separated as far as possible from the pholads, the latter being placed at one end of the testaceans, and the former at the other. It must therefore be assumed that Linnaeus, who seems to have had very little interest in mollusks (one cannot find any discussion of mollusks in his Aménités) was not familiar with the works of Guettard and Adanson, or at least did not appreciate their importance. As for the mollusks, he simply created a system of nomenclature; that is, he gave short, expressive names, sometimes too many names, to the various parts which he used to characterize them. In short, he constructed his system based on the shells alone. Murray, one of his pupils, discussed this in his Latin dissertation entitled FUNDAMENTA TESTACOLOGICA, first published separately and subsequently inserted in volume 9 of the academic Aménités. The French zoologists, on the other hand, who created the science of malacology, paid attention only to the external parts of the animals and did not discuss the shell-less mollusks at all.

Nevertheless, the impetus given to natural history in all Europe by Linnaeus's SYSTEMA and in France by the writings of Buffon was the reason why several naturalists published many works dealing with the anatomy and the description of a rather large number of mollusks. This is what Boadsh, Baster, Forskål, Fabricius, Müller and others did. Besides, the principles so beautifully elicited for botany by the celebrated Bernard de Jussieu and Adanson were applied to various sections of zoology, and thus a gradual change in the manner of looking on the classification of animals came about. People began to realize that they have to be intimately familiar with the entire structure of animals in order to place them so that they would conflict least with their natural associations.

M. K. Jacobson

AN EARLY BOOK ON FLORIDA SHELLS

Miriam K. Hicks
1522 Palmwood Drive
Eau Gallie, Florida 32935

Territory of Florida, written in 1837 by John Lee Williams,[1] a district attorney, was the only history of Florida in print for almost thirty-five years. It was published sixteen years after the United States acquired the colony from Spain in 1821; only 1,000 copies were printed originally. Williams wrote an account of the history of the state, related the political activities of that time, gave word sketches of portions of its topography, told of the Indian tribes, the climate, and listed and commented briefly on the flora and fauna of Florida known at the time -- quite an ambitious undertaking for any one man.

Three and a half pages were devoted to "Shellfish" alone and it is of this account that I wish to report. Barnacles were included and referred to as insects, but it is the record of the few mollusks that interested me. Approximately thirty-five families were mentioned with comments about some of the species.

Common names were given prominence and no author's names were added to the scientific names. Most of the species' names were those of the Eastern Atlantic, for example: Cardium edule. Of course, in 1837, reference works were quite limited. Williams did say that C. edule grew very large on the grassy shores of the Gulf of Mexico. He may have had no way of knowing that C. edule is a small species, averaging two inches and common in Europe. The cockles he saw may thus have been Trachycardium magnum (Linnaeus 1758) or possibly Dinocardium robustum (Lightfoot 1786). C. edule is the type-species of Cerastoderma, a cold water group of smaller dimensions than the genera given above.

Many of the names used by Williams are synonyms, sometimes of species in other families. For instance, Williams wrote, "Venus edentula, a beautiful species, is diaphanous, tinged with red, the inside of a gold color." This is probably Anadontia alba (Link 1807) in the Lucinidae, since V. edentula is the type-species of Anadontia Link 1807. In addition, Williams misidentified a Floridian cowrie as Cypraea arabica L. of the Indo-Pacific. He wrote: "The finest species (specimens?) of C. arabica, called mikrimak, are found about the roots of the mangroves, on the Florida Keys .... Fine mikrimaks, at Key West, sell from three to six dollars per dozen."

Marima was a name used for scallops. This statement also caught my eye: "No part of America can boast finer oysters than St. Andrews Bay.[2] I have seen them 12 inches long, and very fat."

Two species of Chitons, called Multivalves, were given: C. spinosus (a synonym for Acanthochitona spiculosa (Reeve, 1847) ?) and C. larvaeformis.

After I wrote the above, I returned the book to the library, but questions nagged me and I wanted answers. Well, it seems that John Lee Williams, John James Audubon and William Bartram had two things in common -- their intense interest in Florida and the fact that all three were at Fort Picolata, on the St. Johns River, at various times. When Williams retired he lived there. Bartram had had a plantation there and though he died in 1823 it is possible that Williams knew him and had access to his library. There is no indication that he traveled with Bartram. In The Travels of William Bartram, by Francis Harper, 1958, it states on page 427 that the principal authorities on which Bartram based his nomenclature were Catesby, Edwards, and Linnaeus. Linne's Systema Naturae was first published in 1735 and Bartram's "Travels" in 1791.

In the preface of Territory of Florida it states that Williams allegedly traveled with Audubon. In Audubon in Florida, by Kathryn Hall Broby, 1974, I could not find his name mentioned as a traveling companion but on page 9 did read that, in 1824, Audubon had met leading scientists of the day, among them Charles Le Sueur.[3] Audubon was at Picolata but briefly, according to Broby, so the mystery deepens. My mother was born at Tacoi, nearby, so I read the account with interest.

As I do not have access to copies of Harper's The Travels of William Bartram and Audubon's Birds of America, I still do not know if they gave credit to Linne and LeSueur respectively; at any rate this is the closest I can get to determine which authoritative works John Lee Williams consulted in his attempt to identify his specimens of mollusks.

[1] Reprinted 1962, University Press, Gainesville, Fla.
[2] West of Panama City on Florida's west coast.
[3] For short biography see American Malacologists, p. 127.

HAVE A NICE SUMMER -

SEE YOU IN SEPTEMBER !

JUNE 1976 SUPPLEMENT TO ROSTER OF NEW YORK SHELL CLUB

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, OCTOBER 10, 1976, at 2:00 P.M.

PROGRAM: INCREDIBLE SHELLS. A color slide presentation by Joel Greene of San Francisco.

AQUARIUM OBSERVATIONS by Dorothy Raeihle

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FUTURE PROGRAMS

We are pleased to announce that at the meeting of November 14 we will have as guest speaker Mr. Harold Lewis, of the Academy of Natural Sciences of Philadelphia. His talk, illustrated with color slides, is entitled THE COMPARATIVE ANATOMY of the BURSIDAE and CYMATIDAE. Also on the November 14 program will be Reports and Color Slides of the Recent AMU Meeting, by M. K. Jacobson and John Germer, respectively.

We look forward also to the meeting of December 12 when Richard Goldberg will present SHELLING IN THE BAHAMAS with his brother, Marc. As both are artists as well as students of mollusks, we anticipate a beautiful presentation.

AMU CONVENTION IN COLUMBUS, OHIO

The 42nd annual meeting of the American Malacological Union was held on the campus of Ohio State University in Columbus, Ohio from August 2 through 7. Dr. Dorothea Franzen of Illinois Wesleyan University presided and 129 members were registered. The accommodations on the beautiful campus were superb and the University authorities went to all sorts of pains to make our stay pleasant and memorable. A large number of excellent papers were presented in a modern and comfortable auditorium. This reporter heard two of the best reports he had ever heard in the twenty or so AMU conventions he has attended: one by Father Antonio Frias-Martins on the distribution of the marine shells on one of the islands of the Azores. It was presented on a double screen so that the map locating a particular collecting station appeared side by side with a picture of the station itself, soon to be followed by pictures of the shells collected there alongside a graph showing their relative abundance and exact habitat preferences. It was, as the moderator stated, a most elegant presentation. The other was a report by Mr. Hal Lewis of Philadelphia on the differences between Bursa and Cymatium. The talk was delightfully delivered and enriched by clear anatomical and radular drawings -- the work of Mr. Lewis himself. What made it so fascinating was that not only were we clearly shown the morphology of both groups of animals, but also how this was associated with the life functions. Thus we learned not only how the animal's innards were organized, but also why. The New York Shell Club will have the pleasure of hearing this talk repeated by Mr. Lewis at our October meeting.

History of sorts was made in Columbus because the first shell literature auction ever held by a malacological group took place there. Books, monographs, journals and reprints were contributed by members, both individuals and institutions -- the Delaware Museum of Natural History presented many valuable items -- and the assembling of the literature and the printing of the auction catalogue was done by Dr. Susan Cook of O.S.U. and an enthusiastic and devoted staff. The auctioneer was Karl Jacobson, and by the time the auction was over the treasury of the AMU had been enriched by almost $1,000. For some reason the noisy auctioneer was presented with a gift of a beautiful Busycon canaliculatum paper weight executed in pewter.

Of other happenings: The Texas contingent invited everybody to a lively party which every one enjoyed to the full; a tour backstage at the Museum of Zoology showed us the workrooms and immaculately kept collections; the banquet held at the Faculty Club gave us superb food in an elegant setting. There was also a field trip on Friday which, for most members, was washed out by heavy rains. However, some reported good collecting on the Upper Darby Creek, the creek in danger of being destroyed by unnecessary damming.

Dr. Franzen and Dr. Stansbery and their committees are to be applauded for their achievement of an especially fine meeting.

The officers for 1977 are: Dr. George M. Davis of the Academy of Natural Sciences, President; Dr. Carol B. Stein of Ohio State University, President-Elect; William E. Old of the American Museum of Natural History, Vice President. Newly appointed Councillors-at-Large are Dr. Richard S. Houbrick and Herbert Athearn.

It was announced that the 1977 meeting of the AMU will take place in Naples, Florida during the second week of July.

mkj

GOSH-I-NEVER-KNEW-THAT-BEFORE DEPARTMENT

In MODERN MATURITY MAGAZINE, organ of the American Association of Retired Persons, August-September number, 1976, p. 34, we read that you'd better not buy a Golden Cowrie when a dealer pulls one from under the counter. He must be trying to cheat you, the author says, since probably fewer than ten specimens of this shell are known to exist in the world. (!!! --Ed.)

mkj

THE TWENTY-FIVE KNOWN SPECIES OF LAND AND FRESH WATER MOLLUSKS FROM GREAT NECK, LONG ISLAND, NEW YORK

Edward Slater

NOTE: This article (adapted) appeared in the Cuban mimeographed publication CIRCULARES, No. 351, March-April 1954. We print it now in the hope that someone in the region will try collecting there again to see what changes if any have taken place in this area in the last 22 years. --Ed.

The peninsula of Great Neck, which is surrounded by Long Island Sound, Manhasset Bay and Little Neck Bay is located 20 miles from Manhattan. Great Neck is on the north shore of Long Island and adjoins the northeastern corner of Queens. As it happens, Great Neck is a rapidly growing community since its population has increased from 6,000 to nearly 40,000 in the past 13 years. However, there are still many wooded areas, farms, large estates, ponds, marshes, fields and lots where snails, bivalves and slugs may be obtained.

In collecting in Great Neck, I have come across about seven different species of slugs. I have not identified these species but they have varied from four inches down to one-half inch. Their colors have varied too. I have noticed slugs of these colors: gray, black, pink, orange and brown. Some species of the slugs have dark purple streaks or spots on a pink or brown background. If you were to visit anyone of the three fresh water ponds in Great Neck, you probably would find all seven of these mollusks. You would find them on decaying leaves in the pond, on other pond vegetation or on the bottom of the pond. The seven species are Physa heterostropha and Lymnaea columella which are the left and right-handed pond snails, Fossaria modicella, another pond snail, Helisoma trivolvis, Gyraulus parvus, a small species of snail about one-fifth of an inch high which has a shape similar to the Helisoma trivolvis, and two species of pond bivalves, Musculium partumens and Pisidium sp. which are quite small. These bivalves are usually found between the decaying leaves which are packed together in the pond.

The most common and widely spread land snail to be found in Great Neck is Zonitoides arboreus. It was the only species of snail along with four types of slugs which I have found in my backyard. The snails live under decomposing leaves, under rocks and under logs throughout the wooded areas of Great Neck. They require dampness but are never found in very wet areas. I have never found these snails growing profusely in any one spot. I usually find them scattered over a wide area.

A snail which grows slightly larger than Zonitoides arboreus is its big brother Zonitoides nitidus. This snail lives under leaves, logs and other trash such as paper. It lives in very wet marshy areas and can be found readily near to the ponds, in grasses, or in decomposing matter.

Oxychilus draparnaldi and O. cellarius are found in Great Neck. These snails are hard to distinguish one from the other. They live near the coastal areas. The snail may be found in damp to fairly dry areas. They usually live in fields or lightly wooded areas, in grasses or under paper, logs or leaves. Cionella lubrica are found scattered all over Great Neck, under rocks or near walls made of rock or cement. Helicodiscus parallelus is found in dry grassy areas and under dead wood. Triodopsis albolabris, Vallonia pulchella and Succinea ovalis are all found in Great Neck, but they are scarce and I obtained only a few of each.

Cepaea nemoralis has been found in Great Neck, too. I have never found one myself but after seeing several in my biology book and tracing them, I have found that occasionally they appear in one area. I have paid several visits to this area but found no snails. This is a good size snail of pretty coloring and often has black bands.

There is only one snail in Great Neck that I have found which has had certain significance, and that was the discovery of Discus rotundatus. This snail is a native of Europe. It first appeared in this country near Boston. Then Mr. Jacobson and Mr. Bretet of our own shell club found the snail in Fort Tryon Park in New York City. After this I found the small snail on an old Grace Estate in Great Neck. Within several months the snail showed up in three more places in Great Neck. Since then I have heard that the species has been discovered in Rockaway, New York and Malvern, New Jersey. I am sure Discus rotundatus will be found in several additional places in the metropolitan area before long and I am quite sure that I will find additional localities in Great Neck where the snail can be found, too.

The four areas in Great Neck where the snail is located are about a mile from each other. On one area the snail is scarce. This area is one of the two Grace properties where the snail can be located. I have found the snails in or under a few logs in a very dry field in this locality. The dryness is probably the cause of the scarceness of the snails. Two of the areas where Discus rotundatus are found are not Grace properties. In these two areas the snails are quite abundant. Both of these areas adjoin Kensington pool or Kings Point parks. The snails are found under rocks, piles of rocks, logs or wet leaves in these localities. The place where the snails are most abundant is the area where I first discovered them in the old Grace Estate. Here the snails live mostly under dead wood. They also can be found under paper here. This old estate has been overgrown into a wood of medium size trees. Norway Maple, Sugar Maple, Black Locust and Wild Black Cherry trees are the most plentiful trees in this locality. The dead wood which I have mentioned is very abundant over the damp ground. There are more Discus rotundatus in this area of about an eighth of a square mile than there are Zonitoides in Great Neck. The place is literally crawling with them. They can be found here all year around in abundance. In wet warm weather you can find the snails almost covering the sides and bottoms of almost all of the small logs. In the four localities where the colonies of Discus rotundatus are found you may find them living with colonies of Zonitoides arboreus, Zonitoides nitidus, Oxychilus draparnaldi, Oxychilus cellarius, Cionella lubrica and Helicodiscus parallelus.

If these snails were brought over here from Europe when plants were imported for estates or parks, three out of the four localities in Great Neck could fit under this possibility. One park where Discus rotundatus is located is Kings Point Park which is just a wooded bird sanctuary and no estate has ever existed within one-third of a mile from this colony of Discus rotundatus. Unless the snail has traveled this distance there is no account of how it got there.

FROM THE MINUTES OF THE JUNE MEETING

Karl Jacobson offered a brief note on the recent history of the designations Archeo-, Meso- and Neogastropoda. In 1960, he reported, an investigator named L. R. Cox proposed that the last two be combined into one division, and that it be called "Caenogastropoda," meaning "recent gastropods." In 1973, however, biologist W. F. Ponder raised objection to this bit of high-level lumping, giving as reasons that the Neogastropoda probably derived directly from the Archaeogastropoda and not directly from the Mesogastropoda. Moreover, there are important differences in the digestive systems of the Mesogastropoda and the Neogastropoda. Hence, current usage has reverted to the old divisions.

The annual election of officers produced the following executive team: president, Veronica Johns; vice-president, William Walkwitz; treasurer, Mathilde Weingartner; recording sec'y, Milton Werner; corresponding sec'y, Monique Caubere; historian, Nick Katsaras; directors, Sol Weiss (chairman), Robert Janowsky, Kenneth Sanger and Al Scarpetti.

Following a report on the ever-increasing cost of producing "Shell Notes," it was moved that Club dues be raised $1.00 per year for both regular and corresponding members. The new figures will be $5.50 and $4.00, respectively.

The major speaker was Bill Old, whose subject was the Conidae of the Americas. He noted that the Caribbean province covers about five times the area of the Panamic, but the number of Conus species in each is about equal. He feels that the Panamic is home to about 40 valid species, and the Caribbean to about 35. Over the last 35 years, about 40 new species have been proposed, those for the Caribbean side outnumbering the Panamic by about five to one. Bill observed that many Caribbean cones were first named in Europe, and that many of these early descriptions give erroneous locality data. His slides included photos of several innured specimens whose subsequent growth produced strange shapes. He also showed the wide range of color variation in such species as regius and brunneus, and the analogs of the two provinces. Only mus, he said, is known on both sides of the isthmus.

M. Werner, Rec. Sec'y

BICENTENNIAL SHELL GIFT TO U.S.A.

Conchologists are being asked to join in contributing funds to present a lovely specimen of Conus gloriamaris to the Smithsonian Institution as a birthday gift to the U.S. Many people were surprised to learn that our national collection does not have a specimen. Your contribution is tax-deductible and your name will be listed as one of the donors. Checks payable to the Delaware Museum of Natural History should be mailed to: Gloria Maris, Delaware Museum of Natural History, P.O. Box 3937, Greenville, De. 19807. Any excess contributions will be given to the Smithsonian for other wanted species.

MORE ON DRILLED LITTORINA

The second of two recent articles in New York Shell Club Notes (217 & 221) on Littorina drilled by Nucella et al. jogged my memory and sent me to my Littorina drawer. Wrong drawer. So I moved along to Muricidae and found what I wanted: a Urosalpinx cinerea and a Littorina littorea in the same box.

When I collected them, the former was at work on the latter, as is still shown by a neat, but incomplete, drill-hole barely over one mm in diameter and less than one mm deep. It is straight-sided and the bottom is concave. Its location is slightly below the periphery, about 8 mm in from the lip. The Urosalpinx is 20.5 mm high, and the Littorina 19.3 mm. Because of its globular shape, the prey makes the aggressor look small. The scene of the interrupted attack was Center Island, Bayville, on the north shore of Long Island, New York. As I remember the find, it was in the intertidal zone, where L. littorea are usually found in profusion. The Urosalpinx must have been beached by the exceptional wave action stirred up four days earlier by the edge of a hurricane. The date was September 23, 1961, and the occasion was a New York Shell Club field trip.

Milton Werner

HISTORY OF MALACOLOGY TO 1825 (V)

Ducrotay de Blainville

P. S. PALLAS

Pallas might be looked upon as the head of this new school of thought which was so diligently supported by French naturalists, and he undertook to propagate it in the rest of Europe. It was in his MISCELLANEA ZOOLOGICA, published in 1766, that Pallas, like a true man of genius, planted the seeds from which ultimately sprouted a vast improvement in the systematics of the malacozoa. To see how true this is, one need refer only to his study of Aphroditidae in pp. 73 ff. of his work. Here he shows that Linnaeus, in his placement of the Vermes Mollusca, was far from correct in depicting the natural condition; he was quite wrong when, following the conchologists of his time, he separated these creatures into only shelled and shell-less orders. Much more was needed. Thus Pallas proposed to unite all the univalves into a single division because he thought that this would constitute a natural group. Into this division he also placed the sea slugs like Doris, Thethys, and Scyllaea, but he also added the cuttlefish (Sepia) and jellyfish (Medusae) -- in both cases quite incorrectly. In his second order, the bivalves, he placed all the shelled bivalves including shipworms (Teredo) as Adanson had previously suggested. He also thought that the ascidians were merely naked, shell-less bivalves (an idea later much in vogue, but now known to be quite false. tr.)

FOOTNOTE: It is appropriate that during this year we present as a "bicentennial of malacology" the series, HISTORY OF MALACOLOGY TO 1825. Karl Jacobson translated and adapted the material from Chapter 5 of the MANUEL DE MALACOLOGIE ET DE CONCHYLIOLOGIE (Paris, 1825) written by Henri Marie Ducrotay de Blainville, French zoologist and physician (1777-1850).

The early scientists of whom de Blainville wrote were primarily naturalists, physicians, botanists, and zoologists. Many of them are referred to in these articles by surname only (Buffon, Baster, Draparnaud et al). In an attempt to learn about the personalities behind these names, we browsed Peter Dance's SHELL COLLECTING, An Illustrated History (1966) which has a wealth of information on early collectors, collections, and writers. Then in Webster's Unabridged Encyclopedia we found a few of the names honored in other fields: In botany there is *Daubentonia* = a genus of shrubs, and in zoology *Daubentonia madagascariensis*, a nocturnal lemur, both named in honor of the French naturalist Louis Jean Marie Daubenton (or D'Aubenton) who lived 1716-1799 (NOTES 220:4). From Peter Dance (ibid pp. 54-55) we learn that Daubenton was a protege of Comte Georges Louis Leclerc de Buffon, French naturalist (1707-1788) who was instrumental in building the 'Cabinet du Roi' of Louis XIII into a natural history museum and whose writings apparently influenced his contemporary, Linnaeus.

The notation in NOTES 222:4, "(=Physa of Draparnaud)" was enough to spur a search. In Webster's we found that *Draparnaldia*, a genus of green algae, is named in honor of the French botanist Jacques P. R. Draparnaud who lived 1771-1805. Dance records that Draparnaud's shells are in the Vienna Museum. In NOTES 221:3 there is a chapter on Michel Adanson, French naturalist and botanist who lived 1727-1806. Apparently his was a busy and interesting life. The lovely slit shell *Perotrochus adansonianus* is named for him as is the botanical genus *Adansonia* which consists of two species of trees of which *Adansonia digitala* is the baobab of Africa and India and *A. gregorii* the cream-of-tartar tree of Australia.

The latest chapter in the series, page 6 of this issue, is on P. S. Pallas. In Webster's we found that pallasite, or pallas iron, is named after P. S. Pallas, Prussian naturalist. "Geol., A meteorite composed essentially of olivine and metallic iron." We also found "Pallas's cormorant" and "Pallas's sand grouse" but we do not know if these birds were named after our P. S. Pallas.

Dorothy Raeihle

SOME SMALLER COWRIES

Nick Katsaras

In the HAWAIIAN SHELL NEWS (Vol. 12, pp. 6-7, October 1964) M. Schilder and F. A. Schilder published a list citing the smallest specimens -- and their location -- of *Cypraea* species which are normally much larger. The following list is of dwarf specimens of the same species which either equal or better the sizes cited by the Schilders. All the specimens cited are in the Katsaras Collection except *C. cervinetta* which is in the collection of William E. Old.

1.	*C. cervus* L.	48mm	Schilder: 48mm in Budapest Museum
2.	*C. cervinetta* Kiener	32mm	Schilder: 32mm in Collection Vayssiere
3.	*C. carneola* L.	17mm	Schilder: 17mm in Leiden Museum
4.	*C. talpa* L.	28mm	Schilder: 40mm in Leiden Museum
5.	*C. stercoraria* L.	28mm	Schilder: 30mm in Museum Tervuren

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NEW YORK SHELL CLUB NOTES No. 225 October 1976 Page 1

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, NOVEMBER 14, 1976, at 2:00 PM

PROGRAM: THE COMPARATIVE ANATOMY OF THE BURSIDAE AND CYMATIIDAE (with color slides) by Harold Lewis, The Academy of Natural Sciences of Philadelphia.

AMU '76. Color slides and comments by John Germer and members.

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DON'T MISS our guest speaker's presentation in November: Hal Lewis gives a thoroughly comprehensive and lucid description of his favorite subject (See above).

And DON'T MISS our meeting of December 12th, when the report of collecting on Long Island in the Bahamas, by Richard Goldberg, promises another highlight of the season.

THE PERILS OF COLLECTING LAND SHELLS

Morris K. Jacobson

In the book "American Museum of Natural History GUIDE TO SHELLS" by Emerson and Jacobson (Knopf, 1976), on page 197 the authors warn about the dangers of land snail collecting, the greatest of which is a possible encounter with a poisonous snake. These creatures are frequently at home in the very same areas preferred by land snails.

Recently NYSC member Harold Feinberg, who is in charge of the non-molluscan Recent invertebrates in the Museum Collection, had an unpleasant experience of just this nature. In April, 1976, while collecting on Powell Mountain near Big Stone Gap, Scott County, in western Virginia, he was bitten in one finger by a small but vigorous copperhead. His arm, he reports, swelled up like a balloon and he had to spend three days in a local hospital. Complete recovery took longer. The snake, though juvenile, had apparently just awakened from hibernation and hence its supply of venom was quite large and undiminished. This explains the seriousness of Harold's reaction.

Harold informed the writer that this attack left him with an important anatomical change in his body, namely, a narrow, vivid, yellow streak all along his back. He will, of course, not give up his land shell collecting; no land shell collector ever does. As a matter of fact, on a collecting trip subsequent to this adventure, in August of 1976 in Arkansas, Harold discovered a species which he is sure is new to science. But in the future he will be more than careful. No more stirring up the ground rubble (where snails live) with a bare finger without looking most carefully first. In snake country he now uses a long light-weight cane much as a blind person does to frighten the snakes into retiring. And even in the inevitable excitement which overtakes every true pulmonate collector in the heat of the chase, even then he will not forget that there are snakes in them there leaves.

The author of this note made a useful tool for land shell collectors, This consisted of an ordinary garden hoe, the handle cut down to a convenient size -- say 3 feet or so -- and the metal head trimmed down to a small, sharp, triangle. With this the ground cover can be turned over, snails uncovered, and curious snakes discouraged from making exploratory attacks. It need only be added that my tool did not get much use. I left it, soon after I made it, in the Indio Desert in California under a cactus bush where I had collected a lovely lot of *Micrarionta*. The excitement of my find didn't abate for a long time and I failed to notice the absence of the snail hoe until we reached San Diego.

THE A.M.U. CONVENTION 1976

Monique Caubere

During the week of August 2-6, 1976, the American Malacological Union had its 42nd annual convention in Columbus, Ohio, on the sprawling campus of Ohio State University. Over a hundred members were present from many different states. The New York Shell Club could boast of nine local members attending: Dr. William Emerson, Bill Old, Karl Jacobson, Veronica Johns, Dorothy Raeihle, John and Dot Germer, Marian Hubbard and I, and three long-time members: Juliette Compitello, Adlai Wheel, and Dr. Katherine Palmer.

Mornings and afternoons were filled with series of lectures given by professional, student, and amateur malacologists. The principal topic was freshwater mollusca, especially Unionidae. Some concerned emphasis was also placed on Parasitology, as several species of freshwater mollusks act as primary hosts to liver fluke larvae which can in turn infect man. Other monographs discussed changing populations of freshwater mollusks, pointing out the detrimental effects of damming rivers, altering water levels and courses and industrial pollutants. The Army Corps of Engineers was once again cited as a major culprit. Studies conducted by the malacologists are being presented to government agencies in an attempt to preserve many endangered and delicate, endemic populations. Among the most interesting marine reports were: *Darwin's Finches: Caspian Cockles*, by Kenneth Boss of the Museum of Comparative Zoology at Harvard, *The Comparative Anatomy of the Bursidae and Cymatiidae* by Harold Lewis of the Academy of Natural Sciences of Philadelphia, and *Brief Notes on a Few Species Observed in Captivity* by Dorothy Raeihle. The material presented comprised an impressive bulk of scientific information from which even an amateur could glean new and fascinating insights.

The conference was not without social activity. During breaks and evenings, members could be seen congregating, anxious to meet new people and to see old friends. Tucker Abbott's lively spirit sparked even the shyest among us. Everyone was extremely friendly. Following tradition, the Texas contingent threw a big bash. All were invited, and there was no shortage of excellent refreshments. There was also an elegant and delicious banquet held in a reception hall of the Faculty Club.

One evening members were invited to visit the University Museum's mollusk collection. We were allowed to prowl among countless vials, and drawers of shells. The marine collection was small, but the freshwater collection was astounding. For someone unfamiliar with these shells, the seemingly endless rows of jars of preserved specimens were most impressive.

Another highlight of the convention was the auction of shell literature. Many books were offered to the highest bidder; some were antique with beautiful plates, others rare, and some recent. Karl Jacobson acted as auctioneer and delighted everyone with his witty showmanship. The sale (which included tables spread with reprints and miscellaneous smaller publications) was a huge success and padded the A.M.U. treasury with almost $1,000.

The last day of the meeting was taken up by an all day field trip to three different localities to collect land and freshwater mollusks. In spite of threatening weather, many members formed a caravan and, armed with collecting buckets, plastic bags and insect repellent, trekked through frequently tick infested fields and swamps. Fine specimens of many species were found at the locales including live naiads in Little Darby Creek. As an unexpected bonus, some fine Devonian fossil corals and brachiopods were also collected.

The 1976 A.M.U. convention was an enriching experience especially for a newcomer like me. It was a perfect blend of scientific information, stimulating conversations, entertainment and friendship.

HISTORY OF MALACOLOGY TO 1825 (VI)

Ducrotay de Blainville

(Translated and edited by M. K. Jacobson)

NOTE: The name Bruguière, often abbreviated to Brug., is well known to every shell collector as the author of many important genera and species. The following installment of this history deals with this important follower of the great Linnaeus. Blainville gives a brief evaluation of Bruguière's standing in the world of malacology.

J. G. BRUGUIÈRE (1)

In spite of the spread of these new ideas regarding the importance of the animal, Bruguière, an author who in recent times has contributed greatly to the advancement of conchology and who was fully convinced of the great benefits which the SYSTEMA NATURAE of Linnaeus had rendered the cause of natural history, benefited only very little from the work which the predecessors of the great naturalist had accomplished in the field of malacology. In fact, he almost completely followed Linnaeus. Thus, he still kept the soft-bodied vermes and the testaceous vermes in two different orders. Among the soft-bodied vermes, which he divided into two sections depending on the presence or absence of tentacles, he brought together some very different animals. Thus, in one group which included the ascidians and Thethys, he placed such incongruous creatures like copepods, brachiopods, polyps, planarians and others. His other section is also heterogeneous. Together with cuttlefish (Sepia), Clio, Doris, Aplysia, and slugs, he placed Myxina, a fish, holothurians, Medusae, and various kinds of bryozoans -- as Linnaeus had done. However, he properly excluded the sea urchins and starfish which Linnaeus had included in the Mollusca. Bruguière was close to Linnaeus in his treatment of the testaceous mollusks, except that he increased the number of genera and defined them better. This order he still divided into uni-, bi- and multivalves. In the multivalves, where he placed the chitons, he also included the Lepas of Linnaeus, divided for the first time into acorn barnacles and gooseneck barnacles, as well as Teredo, Fistulana (a new genus), Pholas, Char (a new but imaginary genus), and Anomia (here used in the sense of a brachiopod,-mkj), divided into Anomia and Crania (brachiopods).

He divided the bivalves into equilateral and inequilateral. In the first group are three new genera, Arcada (perhaps an imaginary genus), Placuna, and Perna, which are part of the Ostrea of Linnaeus. In the second group are several new genera, Trigonia, Cardita (separated from Chama L.) and Terebratula (a brachiopod, -ed.).

The univalves are divided into two sections, the unilocular (having one cavity like our gastropods, -ed.) and the multilocular (having many cavities, the Nautilus-like cephalopods, fossil and recent, -ed.).

In the first group, those without a regular spire, Bruguière placed Patella, divided for the first time into Patella and Fissurella. But here he also placed the genera Dentalium, Serpula (a worm, -ed.), Siliqua (new genus) and the watering-pot shell (Clavagella, -ed.), a new genus placed today close to Teredo (sic, -ed.). Thus Bruguière completely overlooked all the careful work done by Pallas earlier.

In his treatment of the unilocular, spired species (=coiled gastropods, -ed.) Bruguière introduced nothing new; he almost consistently followed Linnaeus. However, he restricted the limits of the genus Voluta by eliminating some very different species, and he established ten new genera, many of which were actually created by Adanson: Oliva, separated from Voluta; Ovula separated from Cypraea; Purpura, Cassis, and Vis (Terebra), separated from Buccin (Buccinum ??, -ed.); Fusus, and Cerithium, separated from Murex; Bulimus, drawn from three or four quite distinct Linnean genera, namely Helix, Bulla, and Planorbis, separated from Helix; and Natica, separated from Nerita.

In the multilocular univalves -- Bruguière was more indebted for this section to Breynius than to Linnaeus -- he established three genera, Camerine, Ammonite, and Orthocerate (these are the French vernacular spellings, -ed.), all of which Linnaeus had included in his genus Nautilus.

NOTES ON FUSITRITON

By Robert R. Talmadge

(Read at the joint A.M.U.-W.S.M. Meeting, San Diego, June 1975.)

For many years I had accepted, without question, the generalized statement that *Fusitriton oregonensis* (Redfield, 1846) were not only eaten by the peoples of Japan, but also by our Indian peoples living in the Pacific Northwest. On several occasions I made an effort to render the flesh of these gastropods palatable, but at no time was I able to tenderize the flesh to less than the consistency of a truck tire. The flesh was not only extremely bitter but had a strong iodine-like flavor (Dr. Clyde Roper, U.S.N.M. in discussing this flavor in the flesh of the Great Squid, *Moroteuthis robusta* Verrill, 1876, had learned that such was induced by an ammonia compound within the tissues.). Added to these two problems was a third, which irritated the distaff member of my family, -- odor. When the snails were boiled they gave off the usual smell of clams or other marine snails, but when the flesh was placed on a hot griddle this suddenly altered to a most obnoxious smell which penetrated the entire house. So my culinary efforts were banished to the back yard and the camp stove.

On one trip to the generalized Puget Sound region, my son and I spent several days at Neah Bay. This was the locality from which the Rev. Swan provided P. P. Carpenter with so many species which were later described as new, and anyone making specialized studies of some of the genera and species knows the great value of topotypic material for comparison. As expected, Bob Jr. and I soon had an entourage of Makah children assisting in collecting specimens within the breakwater at the Bay. Several large *Fusitriton oregonensis* were found by the children, and at that time it dawned on me to ask how these large snails were prepared for the table by these "Pacific Northwest Indian People." When the question was asked, the reaction was far more than expected. I was given a horrified look, and although I cannot now present a definite quote, the answer was that, "Mister, no one eats these, they taste bad, and not even the dogs will eat them." The latter was exemplified at a later high tide when we watched the children play catch with the *Fusitriton*. When the shells rolled along the beach, their pet dogs would run up to the gastropods, take one sniff, and then walk stiff-legged back away from these snails.

In later years I found similar situations among the Nootka at both Barkeley and Clayqquot Sounds, and the Esquimau on Prince William Sound, Alaska. At the latter locality we had been asked to check on the diet of the abundant population of Sea Otter, *Enhydra lutris* Linnaeus, and noted that although they exposed *Fusitriton* when rolling rocks for their favorite (there) food, the Urchins, *Strongylocentrotus drobachiensis* (Müller), the *Fusitriton* were ignored. Both Raven, *Corvus*, and Gull, *Larus*, scavenged the areas left exposed by the Otter along the rocky reefs and at no time did I note a *Fusitriton* being eaten. It appears that the only predator to this snail is *Homo sapiens*. And at this time I have been unable to verify the use of *Fusitriton* for food purposes in the Pacific Northwest.

In Japan I found a very different situation. In some areas *Fusitriton* were eaten and in other regions they were discarded. My first contact with the genus was at the National Science Museum where I had the opportunity to visit with Dr. Tadashige Habe, who opened their collection so that I could better understand certain genera of far western Pacific mollusca. Three species were found in the collection, -- F. oregonensis (Redfield), F. galea (Kuroda and Habe), and the small, bathyl F. midwayensis Habe and Okutani.

My next contact with this gastropod was at the Tokyo Central Fish Market, where after considerable searching amid the fish, two small baskets of the snail were found. The fishmonger's cooperation was excellent and I learned that Fusitriton were considered to be a more or less inferior product and that these had probably been taken somewhere in the north at Akita (on the Sea of Japan coast of northern Honshu) or perhaps at Aomori on the Tsugaru Straits or even at Hakodate on Hokkaido. The snails had been received from a purchasing jobber and no locale data was available. I asked about F. galea and the fisheries people informed me that because of heavy industrial pollution, the flesh was in poor condition over much of the range of that species. Because of this there had been overfishing in the remaining commercial range of the species, and my best bet to obtain living specimens was to go to Tosa Bay off Shikoku and see if some local fishermen had any in the smaller village fish markets.

I used Sapporo on Hokkaido for my headquarters for some time and visited various fisheries establishments on the Tsugaru Straits, including Hakodate. There I found an interesting situation; Fusitriton oregonensis are taken with Neptunea arthritica (Bernardi, 1857) which are considered more palatable, and which are more valuable on the commercial fisheries market. So, locally, Fusitriton are eaten by the fishermen or local inhabitants, while the Neptunea go to market.

Some time was spent at Abashiri, the home port of many of the northern Whelk Fleet, fishing not only the Sea of Okhotsk, but the Bering Sea and more shallow portions of the north Pacific. Here, all Fusitriton are discarded and the trash cans are full of such residue -- Fusitriton, Clinopegma, sponge, etc. The estuary is full of the living Fusitriton. During the process of unloading, anyone noting this snail will toss it away and those that land in the water are safe. The ones that land on the dock or quay (if they survive the wheels of the truck or feet of the workers) may be saved since the quay is hosed down when the boats are finally unloaded, and everything is washed into the bay.

While at Abashiri (and with Fusitriton so common) I laid out units of 100's on several occasions in an effort to see if there were any indications of sexual dimorphism or geographical morphology in shell characteristics. I could find neither. The only shell morphology that I noted was with age, -- the older the snail, the thicker and broader the shell, plus a thickening of the operculum.

Oh, yes. I did find out how the Japanese prepare these gastropods. They were removed from the shell, ground up, and soaked in "Sweet" of common baking soda overnight. Then they were mixed in with various herbs and spices to form a sauce to go over rice, noodles, or green vegetables. It does appear that the ecological conditions have a strong effect upon the taste of the Fusitriton.

From FESTIVUS, San Diego Shell Club, pp. 63-64

SOME ESCAPE MECHANISMS OF MOLLUSKS

Mollusks form an important link in the food chain of the sea. They are often the prey of many different kinds of hungry predators. But nature also provided the mollusks with ways of escaping their fate. Many such ways are known, and in a article by Peter H. Doering in the University of Rhode Island periodical MARITIMES (August 1976) are listed a few more: "In response (to attack), the molluscan prey has evolved active secondary defenses which are at times quite spectacular. The razor clam, Ensis directus, leaps from its burrow in response to the predatory moon snail, Polinices duplicatus. The slipper limpet, Crepidula fornicata, bites an approaching oyster drill, Urosalpinx cinereus, while the mud snail, Nassarius vibex, rolls and tumbles for several inches when contacted by a predatory starfish. These defenses quickly move the prey away from the predator or prevent the predator from getting close enough to damage the prey." Doering also describes the burrowing activity of the hard clam, Mercenaria mercenaria which increases greatly as a starfish approaches, and of the moon snail, Lunatia heros, which covers the entire shell with its foot so that the tube feet of a starfish can not get a hold on the slippery surface. This article was called to our attention by member and cofounder of our club, Dr. Walter H. Jacobs. Club members are urged to keep a lookout for such defense mechanisms in action while they are out collecting. And to report such observations to the editor.

M. K. Jacobson

IN THE AQUARIUM: Ilyanassa obsoleta and Nassarius trivittatus rolled and tumbled to escape predatory mollusks. Ilyanassa used similar action when carrying the parasitic Hydrobia minuta. Spisula solidissima extended its foot in an evident attempt to burrow or leap away when touched by the propodium of Melongena bicolor. The surf clam's action, especially futile in the absence of sand in the aquarium, only served to give the Melongena the opportunity to thrust its proboscis between the valves of its prey. These Melongena bicolor, when "threatened" with a fresh fish head, raised the propodium, made body and shell into a ball, and rolled and tumbled several inches away from the terrifying object.

Some try to fight back. Nassarius trivittatus, momentarily escaping a predatory Purpura patula, turned to face its attacker and thrust the tip of its radula at the flesh of the muricid. From time to time we have taken a dead victim from the aquarium and seen that it had died with its radula extended, indicating that the unfortunate prey had tried to fight. As this was a more or less routine situation we did not make notes for documentation, but several species, prey and predator, were involved.

Dorothy Raeihle

BRUG.

Jean Guillaume Bruguiere (1750-1798) was Doctor of Medicine to the Faculty of Montpellier. Among his travels was an expedition to the South Seas and another to the Middle East. Dance notes that he is chiefly remembered for his writings on invertebrates in the Encyclopedie Methodique" which was published in 1792. (S. Peter Dance in SHELL COLLECTING, An Illustrated History, U. Of Calif. Press, 1966)

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NEXT MEETING: SUNDAY, DECEMBER 12, 1976, at 2:00 PM

PROGRAM: COLLECTING ON LONG ISLAND IN THE BAHAMAS by Richard Goldberg. (with color slides)

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NOTICE TO OUR READERS

The recent delays in the shipment of the NOTES are due to the overcrowded post offices which have to contend with a torrent of cartons normally shipped by the private postal service now on strike. In such conditions third class mail, the last attended to, is delayed. We hope that these conditions, which are beyond our control, will soon improve.

Editorial staff.

TO THOSE WHO BIND THEIR NOTES

The October issue of NEW YORK SHELL CLUB NOTES (No. 225) was printed on paper smaller than the standard size of 8½" x 11". A limited number are being rerun standard size. IF YOU BIND YOUR NOTES we will be happy to send you a replacement upon receiving your request.

D. Raeihle.

PRESIDENT VERONICA JOHNS is recovering nicely from a fractured hip suffered at home. She tells us that the surgical repair was accomplished with the use of a pin known in medical circles as "Richard's Nail" -- which she has nicknamed her "Richard Snail." She hopes to be able (with the help of a walker) to make an appearance at the December meeting.

We send best wishes to Veronica from the entire membership for her speedy recovery.

A WHODUNIT

At the November meeting a Cavanagh was exchanged for a Stetson. The loser should telephone Leo Juster at 212: 362-6282.

THE ROMANCE OF SHELLS ...

In 1962 our member Louise Allderdice Travers published a fascinating book entitled THE ROMANCE OF SHELLS IN NATURE AND ART. We are glad to receive word from the author that the book is now in its second edition, paperback, selling for $2.90. Mrs. Travers informs us that "it looks just like the 1st edition except that the colored pages are all together." Mrs. Travers is now living at 1201 Brookwood Drive, Tallahassee, Florida 32303.

mkj

A BLIND SHELL COLLECTOR

Several years ago some of us in the Museum of Comparative Zoology in Cambridge, Massachusetts, were introduced to a blind gentleman from Holland who, despite his handicap, had decided to become a professional malacologist. We were all interested but frankly skeptical. A few days ago NYSC member Marie Sussman called my attention to an article in the November 1976 issue of THE ATLANTIC magazine with a short story, as she supposed, about so unlikely a person as a blind shell collector living and collecting in Palau in the Pacific. As we read the article, we were surprised to see that it was a factual article and not a short story at all, and that it dealt with the very same gentleman we had met in Cambridge.

His name is Geerat Vermeij and he was blind from his earliest childhood. Since the time we met him, he travelled and collected in numerous localities reaching from Puerto Rico and Panama, to Ghana, Hawaii, and Palau. The article, authored by Kenneth Brower, graphically describes a collecting tour he witnessed with Vermeij rapidly and skillfully fingering the shells, even to 5mm in size, and immediately classifying them. He uses only his bare fingers to find and collect the shells, and continues doing so despite the fact that he is continually surrounded by such menacing creatures as the ugly and deadly stonefish, the beautiful but venomous lionfish, highly poisonous sea snakes of all colors, sizes and degrees of venom, ferocious stingrays, and other unpleasant creatures that cause the unwary collector extreme pain and even frequently a tortured death. Somehow Vermeij has learned to avoid most of them. Even live cone shells living in sand underneath stones -- an area Vermeij usually avoids because of the numerous dangerous things living there -- are picked up, and with "electric" swiftness Vermeij shifts his fingers to the apex of the shell, where the proboscis with the deadly harpoon-shaped radula cannot reach, and drops it into the collecting bucket.

Vermeij's fingers are often stung by fire corals, penetrated by sponge spicules, and cut by sharp coral surfaces. After a long period of collecting his fingers become so roughened that reading his braille books becomes as difficult, as the author of the article says, as reading a bad M.D. prescription by moonlight.

The article is beautifully written and deserves to be read by everyone interested in collecting in the tropics, if for no other reason than for the graphic description of the agonies suffered by the unwary collector who falls afoul of one of the many unique hazards of the area.

M. K. Jacobson

REVIEW:

A CATALOGUE OF COLLATIONS OF WORKS OF MALACOLOGICAL IMPORTANCE
by George E. Radwin and Eugene V. Coan
(Western Society of Malacologists, Occasional Paper 2, 34 pp. $2.50)

This publication is a useful new bibliographical tool which will prove to be of extreme importance to everyone who does research in the voluminous earlier literature of the science. The reason is the following:

As everyone knows, the priority of date of publication is of extreme importance in determining which of two synonymous names for a single species is to be the valid one. The earlier one wins. Thus priority of even a single day is often of critical importance. Earlier students of malacology were not very exact in dating their works and frequently put only one date on the title page, even if the work itself appeared in several sections at different dates. Some patient students therefore made it their business to rummage through old printers' records, book reviews, correspondence, etc. to determine the exact date of the appearance of each section. These datings are called collations. Unfortunately the collations are widely scattered throughout the literature and frequently researchers themselves are not aware of their existence. Hence the importance of this work by Radwin and Coan. Now it is easy to find these collations and this is bound to result in more careful dating of many species which were named in the 18th and 19th centuries, and thus in more valid and stable nomenclature.

M. K. Jacobson

NEW BOOKS:

BRAZILIAN MARINE MOLLUSKS ICONOGRAPHY by E. C. Rios, containing 1330 species, 1250 photos, 331 pages. Price $20 U.S. Order from Dr. Rios, Museu Oceanografico, box 379, Rio Grande, RS, 96200 Brazil.

FRESHWATER SNAILS OF TAIWAN (FORMOSA) by Gary L. Pace. An illustrated monographic study dealing with the identification, classification, distribution, zoographic affinities and parasitological importance of 39 species of Formosan freshwater gastropod mollusks. Price $15 U.S. from Malacological Review, P.O. Box 801, Whitmore Lake, Mich. 48189.

ARTICLE OF THE MONTH

Dr. Abe S. Margolin has published a very interesting article entitled "Responses to sea stars by three naticid gastropods" in Ophelia 14: 85-92, Nov. 1975. The responses of Natica josephina, N. millepunctata and N. hebraea to ten Mediterranean sea stars was to cover the shell with podial folds or move away from the sea star. However, in the case of N. millepunctata to Astropecten aurantiacus and A. irregularis the response was to extend the proboscis and rasp off the spines and tube feet of the starfish.

Henry D. Russell

HISTORY OF MALACOLOGY (VII)

Ducrotay de Blainville

J. F. GMELIN*

(NOTE: The name Gmelin as the author of shell species is as well known to shell collectors as that of Linnaeus. Below is an estimate of the quality of his work as seen by de Blainville. The name Poli is not well known to shellers. Nevertheless he played a very important role in the development of malacology, as de Blainville explains.)

Gmelin, whose edition of Linnaeus's SYSTEMA NATURAE appeared in 1789 (actually 1788-1793 -ed.) -- that is near the time when Bruguière was publishing his section on Vermes in the Encyclopedia -- may well have consulted all the previous authors. However, he was not a good enough zoologist to benefit from their work. Moreover, he changed very little from the 12th edition of Linnaeus. His system of mollusks, which depends upon the position of the mouth and the tentacles, includes some very heterogeneously constituted genera which, although they are not natural, are often rather well arranged. Gmelin mentions the genus Glaucus (a shell-less nudibranch --ed.) in his discussion of generic characteristics, but does not actually discuss it since its characteristics are all anatomical, not testaceous. Gmelin's subdivisions of the testaceous Vermes (which include the molluscan shells --ed.) differ little from Linnaeus's 12th edition of the SYSTEMA (Gmelin's is the 13th edition --ed.) except that he has greatly increased the number of species in each genus.

(*1748-1804)

POLI*

It was an Italian physician named Poli who was the first one to set up molluscan genera on the basis of the animal alone, without paying any attention to the shell. The first volume of his superb work on the Testaceans of the Two Sicilies appeared in 1791. It seems that he looked forward to treating all the mollusks, naked and shelled, as can be seen in his preface where he divided the mollusks into three orders: (1) Mollusca brachiata (armed mollusks, i.e. Cephalopoda --ed.), characterized by having several arms like a hydra; here Poli placed the cuttlefish (Sepia) and Nautilus of Linnaeus and in addition the tritons and Serpula of the same author which, as Pallas well saw, are only distantly related. (2) Mollusca reptantia (crawling mollusks, i.e. Gastropoda --ed.) for the species which crawl on a long foot like the snails and which always possess a head and tentacles; these are the univalves. (3) Mollusca subsilientia (mollusks which can spring up, i.e. Bivalvia --ed.) for the species which have a long foot, or are free or attached to rocks, and which always lack a head and eyes; these include the bivalves and multivalves (and probably the gooseneck barnacles --ed.). Poli began by investigating the third order first and he published only this part of his work. (Volume 2 appeared in 1795, Volume 3 in 1827 --ed.) He divided this order into six families, depending on the presence or absence of a foot, on how the lobes of the mantle are united and form openings which he called Trachaea. His genera rest upon equally important characteristics and are considerably fewer in number than those of Linnaeus. Although this system of malacology erroneously included the tritons, Terebella, and Serpula in the mollusks, still one must agree that Poli deserves the title of the true founder of the classes of mollusks, molluscorum classis verus fundator, which was given him by Meckel in his dissertation on the Pteropoda. We must add that the bivalve families were, in general, quite naturally constituted and rest in large part on important organs. (NOTE: Poli, peculiarly enough, gave separate names to the animal "inhabiting" the shell and to the shell itself. Thus he called the animal of Arca, Daphne; the animal of Pinna, Chimera; of Pecten and Spondylus, Argus, and so on.)

Translated and adapted by M. K. Jacobson.

(*Giuseppi Saverio Poli (1746-1825), the tutor of the royal heir apparent of the two Sicilies, owned "a cabinet of shells worth visiting." --S. Peter Dance in Shell Collecting, an Illustrated History, 1966.)

ENDANGERED SPECIES

The headline on page 8 of October's NEW YORK STATE ENVIRONMENT announced: "Ovate Amber Snail Proposed for Endangered Status." The article stated: "Along with 32 other land and freshwater snail species (most of which are native to the southeastern and southwestern states) New York's Chittenango Ovate Amber snail found in Madison County was proposed for inclusion on the list of threatened and endangered species by the Department of the Interior. A spokesman for the Interior Department commented that 'These fragile species are particularly valuable to ecologists because they serve as accurate indicators of the overall health of an ecosystem.'"

The snail mentioned, Succinea ovalis chittenangoensis Pilsbry 1908 is described and discussed by Alan Solem (NAUTILUS, Vol. 90, No. 3, pp. 107-114, July 1976). Dr. Solem found that the shell alone differs from S. ovalis ovalis Say 1817, the anatomy and dentition being essentially similar. Nevertheless Dr. Solem agreed that steps should be taken to preserve the habitat and the snail as, Dr. Solem writes, "Studies...suggest that this is a marked genetic mutation of Succinea ovalis Say, 1817, characterized by one shell feature and an apparent specialization in ecology....Despite intensive collecting efforts in other areas of New York and adjacent states, no additional colonies with the features of chittenangoensis have been discovered."

The illustration of chittenangoensis in N. Y. S. ENVIRONMENT is unfortunately incorrect. The picture shows some species of Pond Snail, Lymnaea, and not a Succinea.

A PLEA FOR A MUNDANE MOLLUSK is the title of an article by science writer Janet L. Hopson featured, beginning on page 58, in the Magazine Section of the NEW YORK TIMES of November 14. The writer reports on interviews and a field trip to Big Darby Creek with Drs. David Stansbery and Carol Stein, and describes the plight of Big Darby which Dr. Stansbery describes as "the last free-flowing river in Central Ohio ... a living museum."

Big Darby Creek is threatened with ecological destruction by proposed dams. Only one of the many freshwater life forms is featured in the article, the bivalve Epioblasma torulosa rangiana, or riffle shell, as "The dams would flood the last breeding population out of their home."

For more than two years the American Malacological Union has been giving active support to the Ohio Department of Natural Resources in their attempt to have Big Darby designated as a State Scenic River. The matter is still unsettled.

UNIQUE FORM OF TOOL-USING IN TWO GASTROPOD MOLLUSCS (TROCHIDAE)

Tool-using, the ability to manipulate an object as a functional extension of the body, has been described in a number of vertebrate and invertebrate species. Although earlier workers regarded it as an indication of insight learning, its significance as a behavioural adaptation, possibly arising through the novel use of a pre-existing behaviour pattern, has been stressed in recent studies.

We report here a form of tool-using in two species of prosobranch gastropod, Tegula brunnea and T. funebralis, both of which inhabit the intertidal region on the Pacific coast of the U.S. This behaviour, unlike previously reported instances of tool-using, functions to alter the position of the organism itself rather than displace or modify an extraneous object, and to the best of our knowledge has never been observed in nature or reported from other laboratory studies.

When the snails were inverted, the propodium was extended over the edge of the shell and engaged in a brief period of probing. If they had access to a solid substrate or an object heavy enough to support their weight, the propodium adhered to the support and pulled the shell over in a manner similar to that reported for other gastropods. A gravel substrate consisting of limestone pebbles having an average weight of 0.23 g and an average diameter of 6.0 mm could not sufficiently support the weight of an inverted snail. The prehensile anterior tip of the propodium would grasp a stone and lift it from the aquarium floor. Instead of releasing it immediately, however, the stone was conveyed in a posterior direction to the end of the foot through a series of alternate, retrograde undulations of the sole. This pattern is also typical of the normal locomotory movements of these species. More stones were similarly procured and transferred to the posterior and median portion of the foot where they were accumulated. The continued upward flection movements of the propodium in acquiring stones and the rotating movements of the snail body with the additional weight afforded by the retained stones resulted in the gradual displacement and eventual righting of the snails.

Paul J. Wheldon & Daniel L. Hoffman
of Bucknell University, Lewisburg,
Pennsylvania 17837

Extracted from their article in
NATURE, Vol. 256, August, 1975.

FROM THE MINUTES OF THE OCTOBER MEETING

The first speaker was Dorothy Raeihle, who repeated for us the presentation she made at this year's AMU meeting. Her subject was Aquarium Observations, a summarization of new information she has developed through systematic study of the behavior of specimens she has raised, over the years, in aquaria in her home. Dorothy noted that most of them were collected in Florida, or born on the Raeihle premises, and that most are small, intertidal species. The life cycles of some have already been studied, but in several cases, not thoroughly. Consequently, she has been able to provide considerable important information to professional malacologists. As one example, she established that the breeding female *Marginella apicina* Menke retains viable sperm for thirty days. Dorothy also called attention to the inaccuracy of published descriptions of egg cases of *Epitonium* as "triangular." Clinging sand hides the egg case, which is spherical in *E. humphreysi* and oval in *E. rupicola*. Her comments covering several specimens, were illustrated with close-up photos taken by George Raeihle.

Our invited speaker was Dr. Joel Greene, of San Francisco. His subject was Extraordinary Specimens -- freak and distorted shells, some perhaps representing genetic aberrations. He offered commentary on the many specimens illustrated on the screen, covering deformations that ranged from obvious consequences of injury to the conjectural instances of unusual shape, color, or color patterns. Commenting on a shell from the Sulu Sea, he added the interesting side note that material from this area -- for example, Zamboanga -- will no doubt be rare through the indefinite future, because a recent earthquake had killed many of the fishermen of those waters. Dr. Greene closed his talk with photos of fifteen particularly rare, and also attractive shells, from his collection. His final slide he offered in lieu of the sunset that has become something of a tradition. His substitute was a "sunburst" created by an arrangement of eight *Conus gloriamaris*, of various sizes.

Milton Werner, Recording Sec'y

SNAIL PACE

It's official. A British snail named Lightning is the world's fastest sprinting gastropod mollusk, completing a two-foot dash in one minute 20 seconds - flat. That's a speed of 80 feet an hour and a new world's record, surpassing the old mark of one minute 35 seconds set by another snail named Speedy. The new record was set last year at a world championship race at Falmouth, England, where Lightning, entered by trainer Chris Hudson of Bright, outslithered 23 competitors for the snail-pacing crown. Results of the two-mile run were not yet in as this magazine goes to press.

(Submitted by Catherine Grey; copyright 1976 by National Wildlife Federation. Reprinted from INTERNATIONAL WILDLIFE MAGAZINE of July-August 1976.)

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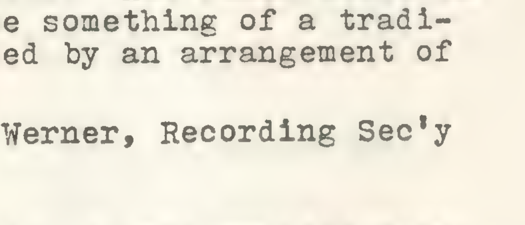

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, JANUARY 9, 1977, at 2:00 PM

PROGRAM: VISIT TO CAYMAN BRAC, by Mart Hulswit
MARKET SHELLING IN MARSEILLES, by Monique Caubere

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FLORIDA SHELL SHOWS

South Florida Shell Club	January 28, 29, 30 Planet Ocean 3979 Rickenbacker Causeway Virginia Key Miami, Florida 33149
Palm Beach County Shell Show	February 4, 5, 6 Colonnades Beach Hotel Singer Island
Sarasota Shell Show	February 11, 12, 13 Sarasota Exhibition Hall
Naples Shell Fair	February 18, 19, 20 Naples
Broward County Shell Show	February 24, 25, 26 Recreation Center Pompano Beach
St. Petersburg 30th Annual Shell Fair	February 24, 25, 26, 27 Treasure Island Auditorium
Sanibel Shell Fair	March 3, 4, 5, 6 Community House, Sanibel

Those of you touring the shell shows may run into Bill Old in Naples and again in Pompano Beach, as he will be one of the judges at each of these shows. In Sanibel, look for Ethelyn Woodlock who has been invited to judge the artistic division at their annual Fair.

Check locally for exact locations and hours of exhibitions.

FOSSIL COLLECTING IN WAYNESVILLE, OHIO

Monique Caubere

Ever since I was invited to join a field trip with the Hunter College Paleontological Club I have been fascinated with collecting fossils. However, as a novice, I know of few collecting areas. A new publication entitled "Fossils" has just come out. One of the regular features of this magazine is a description (including maps) of various sites across North America. During the first week of August the A.M.U. held its annual convention in Columbus, Ohio. You can imagine my excitement when "Fossils" listed the Waynesville formation, a site not more than 70 miles from Columbus, as an excellent locale. Since I was planning on attending the conference, I was in for a double treat.

When we arrived in Columbus I was introduced to Dr. Aurèle La Rocque who is an expert on Ohio fossils and a long-time member of the American Malacological Union. Dr. La Rocque provided Marian Hubbard and me with invaluable information and lent us collecting equipment as well.

As the schedule turned out, we had a whole day to go fossiling before the start of the convention. Gathering a small party, we left the dormitory of Ohio State University and headed southwest through flat farm lands. We then turned off the highway and entered a hilly region specked with red brick farm houses, woods and corn fields. The outcrop, a cut formed by a secondary road, was easily found. Wide borders allowed for safe parking. The weather was perfect for collecting -- sunny but not too hot. Heavy rains during the previous week had caused land slides newly exposing blocks of grey shale at the base of the outcrop. The shale's soft matrix had caused some of the fossils to weather out, and many loose specimens could be found.

The outcrop was located on the north side of the road. It was about 40 feet high and about 300 feet long. Ordovician grey shale formed the lower section, brown limestone lined the crest. The vegetation consisted mostly of dried grasses, sparse bushes and clumps of spiny teasel. It was fairly steep. Loose rocks and dry soil were likely to give way. Footing was unsure, if not dangerous in some places. I tried to reach a recently eroded section about two-thirds of the way up but was unable to do so. Slippery slabs crumbled under my weight and I slid downward about 15 feet before I was able to grasp on to a bush. Thick clothing protected me from getting scraped. We soon learned that the safest and most rewarding collecting was accomplished by sitting in one spot and examining the ground. The eye, once accustomed to focusing on a small area, began to discern many shapes -- whole brachiopods, corals, crinoid stems, bryozoans and trilobite sections. The most outstanding feature of the locale was the incredible abundance of fossils. Thousands were strewn about and could be picked up with little effort. Pieces could easily be chipped off large blocks with a few blows from a geologist's hammer.

It was not possible for us amateurs to know how many different species were collected in the field, though later research identified some of the most common and most obvious specimens. What a pity that Dr. La Rocque was unable to join our party.

Another site about 4 miles from the Waynesville formation contained many similar fossils. It was at this locale that pelecypods and burrows were found. Observation tends to identify the pelecypods as Byssonychia radiata. While these were fairly common here, they were far scarcer at Waynesville.

Several varieties of gastropods existed during the Ordovician in Ohio, but these were never as abundant as the brachiopods. All tend to be small and poorly preserved. Marian Hubbard was fortunate to find a fine specimen of Cyclonema bilix and another gastropod, possibly Sinuites cancellatus, embedded in a shale matrix. No one seemed to have found the high-spired Lophospira bowdeni. A few of the fossils found in cross section may have been the shell outlines of cephalopods but these are not easily identified.

Aurèle La Rocque and Mildred Fisher Marple give an excellent description of the Ordovician fauna of Ohio. According to their research, no Protoza have been found though there is a chance some might turn up. The presence of Porifera seems doubtful as the most common example, Stromatocerium huronense, may not be a sponge at all. Horn and colonial corals, Anthozoa are prevalent. Our party found several specimens of Streptelasma rusticum.

Bryozoans are extremely abundant, but are not easily identified by their external characteristics. These animals formed great reefs during the Ordovician. Much of what I thought was coral turned out, on closer examination, to be bryozoan.

The most abundant fossils were the brachiopods. Thousands of these were perfect and completely weathered out. The largest were Rafinesquina alternata. These flat shells were most impressive. Several types were of the genus Platystrophia. Imperfect specimens made further identification difficult. Other brachiopods included the ridged Sowerbyella regosa and perfect Dinorthis carleyi and Herbentella insculpta. Wanting to see what the interior of a whole specimen was like, I broke several in two. The interior, unlike the dull greyish exterior, was composed of small, perfect crystals. Weathered out half valves clearly showed hinge teeth and interior structure but did not have any trace of crystalization.

Joints and stems of crinoids were found among the other fossils; however, whole or perfect specimens are extremely scarce. One of my most interesting finds was a small piece of shale not more than 2 by 4 inches containing a 3 inch segment of a crinoid stem and a large cross section of Flexicalcymene meeki, a trilobite.

The article in "Fossils" led us to believe that hundreds of tiny rolled trilobites were to be found at the Waynesville site. This was simply not the case. According to Dr. La Rocque, trilobites are seldom found complete. Also, the popularity of the Waynesville formation with many collectors could account for scarcity.

Other fauna, including Annelida, Ostrocoda, Arachnoidea, Edioasteroidea, Stelleroida and Graptoza are all to be found in Ordovician Ohio; however, according to La Rocque and Marple all these are quite rare.

In spite of the brief disappointment for not finding whole trilobites the outing was very rewarding. I would recommend the Waynesville formation to any collector, however, not without a word of caution from this victimized author. Small, furtive ticks creep among the fossils anxious to find an unsuspecting host. So be sure to include insect repellent among your other fossiling regalia.

References:

La Rocque, Aurèle, and Marple, Mildred Fisher, 1955. State of Ohio, Dept. of Natural Resources, Division of Geological Survey, Bulletin 54, "Ohio Fossils," Columbus 1955, ninth printing 1970.

"Fossils" Volume I, issue I, Wexo Publishing Company, Inc., San Diego, California, May 1976.

FROM THE MINUTES OF THE NOVEMBER MEETING

The meeting was conducted by Vice President William Walkwitz in the absence of President Veronica Johns. Mrs. Johns had suffered a hip fracture, and it was announced that she was recovering nicely, and was expected to be at home again within three days.

In a brief presentation Karl Jacobson outlined the history of the AMU, noting that it was formed in 1931 and held its first convention in 1935. It was preceded by the American Association of Malacologists, founded in 1890.

Karl also distributed copies of a reprint from the annual report of the Western Society of Malacologists. The subject of the paper is Karl's observations on the work and philosophies of Felipe Poey, the Cuban naturalist.

Our invited speaker was Hal Lewis, of the Philadelphia Academy of Natural Sciences. His subject was the functional morphology of the Cymatidae and Bursidae. He noted that early authors, relying on shell characters, had a tendency to assign species to the wrong one of the two families. As recently as 1972 a monograph from East Germany, later corrected, placed photos of Murex and Bursa under the heading Cymatidae. Hal then pointed out, with description, photographs, and anatomical drawings made by himself, the distinctive and distinguishing features of the two families as revealed by his own work on them. His methods included dissection and scanning electron microscope studies of radulae. He pointed out how the jaws and proboscis of the Cymatidae are structured for holding relatively inactive prey such as starfish, while the even, rake-like arrangement of the radular teeth is designed for rasping food into fine bits, and the salivary system, esophagus and digestive/alimentary systems for dealing with this soft mass. In the Bursidae, the cup-shaped apertural lip and broad proboscis can immobilize and hold wriggling marine worms. There are no jaws, and the radular teeth are shaped for tearing. The internal systems are adapted to handle this chunkier food mass. Having recognized these distinguishing anatomical features, Hal has been able to identify shell characters that are distinctive.

Milton Werner, Recording Secretary

HISTORY OF MALACOLOGY (VIII)

Ducrotay de Blainville

MEDIAL SUMMARY

During the ten or twelve years of revolutionary violence which disturbed Europe from 1789 to the end of the Reign of Terror in France only very few works on malacology appeared. However, a few journals, among them some dealing with natural history, edited by Bruguière, do contain some data and a few new genera. Thus Bruguière added several genera to those he mentioned earlier in the Encyclopedia: *Unio*, fresh water mussels proposed by Retzius, and *Anodontites* separated from *Mytilus* Linné. Moreover, as one can see from the notes he left before setting out on the voyage during which he lost his life, he thought of erecting the genera *Spondylus* (Houlette), and *Lima*, both separated from the huge Linnaean genus *Ostrea*; *Lucina*, *Capsa*, *Pandora*, all separated from *Tellina*; *Lingula* (a brachiopod,--ed.), separated from *Patella*; and *Corbula*.

This was the state of malacology in 1796. We shall pause here for a moment to view a sort of rebirth of the science, at least here in France. Guettard and Adanson demonstrated the principle that, in erecting new genera, attention must be paid to the shape of the animal parts as well as to the shell, and Adanson excellently defined these parts for us. Linnaeus created the language of conchology and an artificial system of conchology. Pallas showed that in the systematics of these animals the presence or absence of a shell was of only secondary importance and that both naked and shelled mollusks should be united in a single group (i.e. not *Vermes mollusca* and *Vermes testacea* as Linnaeus had done, --ed.). Bruguière took the Linnaean system and made it more precise and developed it remarkably, whereas Gmelin, for his part, by means of a compilation which he had only poorly assimilated, nevertheless accumulated a large amount of material and thus at least prepared the basis for more work. Poli, finally, proposed a truly natural method and described the structure of the multivalves and bivalves very well. When he set up his orders and genera he paid attention only to the animal and little or none at all to the shell. Thus he reached the very opposite point of excess to which the authors we discussed at the beginning of this history had attained (i.e. those who paid attention only to the shell and none to the animal, --ed.).

(Translated & edited by MKJ.)

ARTICLE OF THE MONTH

Zoologica Africana, vol. 10, No. 2, 1975 carries an article by Dr. G. M. Branch entitled "The Ecology of *Patella* from the Cape Peninsula, South Africa. 5. Commensalism." Many organisms are in association with *Patella*; for example the shell offers an important substrate for algae, the amphipod *Hyale prandicornis* vacates its host at high tide, the copepod *Scutellidium* completes its life cycle under limpets. The amphipod *Calliopiella Mich*[illegible] changes color depending on the faeces of the species with which it is associated and on whose faeces it feeds. *Calliopiella* may even defend its host under whose shell it completes its life cycle.

Henry D. Russell

DISCORD IN PARADISE

NOTE: The following are extracts from the correspondence of Felipe Poey, the great Cuban savant, to Thomas Bland, on file in the library of the Museum of Comparative Zoology, Harvard University. (Translations by M. K. Jacobson.)

March 10, 1856: "Sallé (just returned from a collecting trip to Mexico) is an estimable gentleman, a professional naturalist collector (naturaliste voyageur par spéculation), but he also maintains a private collection of his own. He speaks very highly of you, but is very much displeased with Messrs. Petit, Morelet, and the professor at the zoological garden in Paris. These gentlemen, he complains, want to obtain for nothing the objects he collects for them. This can be understood when one is poor like Deshayes and Guérin, to whom Sallé often makes gifts of his collections. But when one is rich, one ought to pay the intrepid travelers who do so much for science and who depend greatly on their collecting trips for income."

November 23, 1855: "Mr. Thery tells me that one of the boxes was completely lost because a sailor opened it thinking that it must contain cigars. When he found only shells, he threw the box into the sea. What a profanation!"

January 20, 1857: (Morelet had written to Poey telling him that Shuttleworth was still alive in Switzerland.) "I have shells for him which were collected by Gundlach on his last trip. I think it is only fair, however, that he send me something in exchange for the many things I sent him. He hasn't sent me anything besides a copy of his DIAGNOSIS (NEUER ARTEN, 1852) in exchange for my MEMORIAS (SOBRE LA HISTORIA NATURAL DE LA ISLA DE CUBA, 1851-61).

February 22, 1857: "Monsieur Gould doesn't pay his debts. I am not very happy with him ... I am sending you a check for $65 to pay for my son's trip. Give it to him when he needs it. I'd rather that he did not get this money too far in advance, because I don't have confidence in his youthful age."

WHAT SHELL IS THAT? On page 5 of the recent best-selling novel by E. L. Doctorow - RAGTIME - we find the following: "He bent down and found a perfect shell specimen, a variety not common to western Long Island Sound. It was a voluted pink and amber shell the shape of a thimble, and what he did in the hazy sun with the salt drying on his ankles was to throw his head back and drink the minute amount of salt water in the shell." Any guesses?

(Reprinted by courtesy of Random House, Inc., publishers.)

mkj

Mit Freude machen wir bekannt, dass R. Tucker Abbotts SEA SHELLS OF THE WORLD (1962) in deutscher Fassung mit dem Titel MUSCHELN UND SCHNECKEN DES MEERES soeben erschienen ist. Laut Herrn Abbott selbst, ist dies die siebte fremdsprachige Ausgabe des Buches. Wir gratulieren herzlich und wunschen dem Verfasser grossen Erfolg.

MOGOTE TALAVERA, PINAR DEL RIO, CUBA

Morris K. Jacobson

NOTE: The following article was written in 1954 and was never published. We are now reading of extensive development in Cuba, with the attending danger to the environment which must be expected. Hence the remarks made here are of particular interest.

In 1948 (Torreia, Havana, no. 13, pp. 1-6) Aguayo and Jaume described two new species and a new genus of land pulmonates from the Mogote (= hill) Talavera, Vegas Nuevas, Consolación del Norte, Pinar del Río Province, Cuba. These were curiously concave-shaped, circular snails, quite compressed, ashy gray, and looking more like operculums than anything else.

In July 1953 I and a few friends visited the Mogote and collected vigorously. The mogote proved to be an isolated limestone block, with rather steep walls, about 100 to 150 feet high, located directly to the north of the San Vicente-Las Palmas Highway between kilometers 5 and 6. The slope facing the road, however, was a gentle incline composed of soil and rocks with so little ground cover that few snails find refuge there. The opposite slope consists of a heavily shaded "hoyo" or roofless grotto with steep, limestone sides, further shaded by thick growths of trees and shrubbery. It is here that most or all the snails were taken.

The road near which Talavera is located forms part of the recently (in 1953) paved Circuito Norte that connects the city of Pinar del Río with the north coast towns of La Palma, La Mulata (the jumping off place for the climb of the famous two-peaked hill Guajaibón), Bahía Honda, Cabañas, and Mariel, and joins up with the Carretera Central at Guanajay. Undoubtedly this well-paved, well travelled road will be the forerunner of intensive housing development in this region. Since Talavera is located on a flat plain, ideally suited for housing and other development, it may well be that the limestone mogote will not exist forever. As Cuba develops, such masses of limestone hills are steadily whittled down to provide cement for building operations. This is now (in 1953) happening to Taguayabón, near Remedios in Las Villas Province, also a type-locality of several species of curious land snails, as well as to several mogotes in Habana Province. There may come a time when these interesting isolated natural features will be preserved as naturalists' preserves, but lest this occur too late or not at all, we are writing this article to make a record at least of the appearance of Mogote Talavera, the only home of Cupullela dominguezi.

HAPPY HOLIDAYS

AND

BEST WISHES THROUGH THE COMING YEAR

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY
NEXT MEETING: SUNDAY, FEBRUARY 13, 1977, at 2:00 PM
PROGRAM: FOSSILING IN WAYNESVILLE, OHIO,
by Monique Caubere

FREAK COWRIES
by Bob Janowsky

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TENTATIVE PROGRAM for MARCH 13: Karl Jacobson on The Naming of Shells; Dorothy Raeihle on Readjustment (?) to New Names.

FROM THE MINUTES OF THE DECEMBER MEETING

President Veronica Johns, who had suffered a hip fracture late in October, was again at her place at the speaker's table, having missed only the November meeting. She did, however, leave the mechanics of running the meeting to Vice President William Walkwitz.

Three new members were introduced: Anne Wightman, Michael Torruzio and Dr. Sol Warren.

Ninety-two copies of the October issue of Shell Notes were returned by the Post Office for an additional 1¢ postage, making them even later in arriving than the bulk of the issue - which had been delayed by a glut in the Post Office caused by a strike by United Parcel deliverymen. The Club has been granted non-profit status by the Post Office, qualifying the NOTES for a lower postal rate. However, copies would have to be bundled according to ZIP code number, and our printer would charge $18 per month for this service From its vantage points on the horns of this dilemma, the editorial staff is still ruminating on whether to be non-profit, or not to be.

The speakers for the day were three youthful members - Linda Springer, and Richard and Marc Goldberg. They described a collecting trip that took them, last July, to "the other Long Island" -- the one in the Bahamas. They collected 246 species in eight days, some by diving at various points off the northern end of the island, and and many by examining the material in the drift line. Their photographs included scenery, collecting areas, underwater shots, and close-ups of a number of their finds.

HISTORY OF MALACOLOGY TO 1825 (IX)

Ducrotay de Blainville

Translated and Edited by M. K. Jacobson

GEORGES LEOPOLD CHRETIEN CUVIER, Part 1

From 1789 to the end of the eighteenth century malacology made hardly any advance at all (because of the revolutionary situation in France, --ed.). Then in 1798 appeared Cuvier's TABLEAU ELEMENTAIRE DE L'HISTOIRE NATURELLE DES ANIMAUX. Cuvier was convinced, like Guettard, Adanson, Geoffroy, Müller, and Poli, that the proper classification of mollusks, as of all other animals, must rest upon a study of their complete structure. In this work he proposed his new system.

He thought that the entire section of the Malacozoa represented a stage in the series of animal life and that they should precede the animals which are externally articulated (= Crustacea --ed.). In a second innovation, Cuvier joined the *Vermes mollusca* and the *Vermes testacea* of Linnaeus into a single group, as Pallas had proposed, under the single classical name of Mollusca and thus to look upon the presence or absence of a shell as of only secondary importance. Cuvier also separated a large group of animals with white, instead of red, blood, the group which was soon to be know as the Invertebrata. He characterized this section of white-blooded animals (i.e. Mollusca --ed.) very clearly and sharply, as he did the other three sections of the Invertebrata, namely the insects, the worms, and the zoophytes, which he included in the group of articulated animals without an internal skeleton. On the basis of their shapes, he divided the Mollusca into three sections: the Cephalopoda, the Gasteropoda, and the Acephala. In the first section he placed not only the cuttle-fish -- which he divided into the true cuttlefish and the octopuses -- but also the *Argonauta*, which he confused with *Carinaria* and *Nautilus*, and by analogy with *Ammonita*, *Orthoceras*, and *Camerina*. (All these forms, fossil and Recent, except *Carinaria*, a heteropod, are today considered to be Cephalopoda. --ed.). He divided his gastropod section, which was considerably enlarged, into two groups, depending upon the old idea of the presence or absence of a shell. The chief genera of the naked mollusks were the sea slugs, *Thethys*, *Aplysia*, and *Doris* of Linnaeus. He began to divide *Doris* into the true dorids: *Tritonias*, and into *Eolida*, *Phyllida* (new genera) and *Scyllaea*. All these genera are indeed all closely related, but Cuvier united with them (certain genera which are now known to be jellyfish. --ed.) The shelled gastropods were divided into five divisions, depending on the nature of the shell.

In the first division the shell is divided into several pieces. Here Cuvier placed the chitons, the animal of which he placed close to *Phyllidia* (a nudibranch --ed.). In the second division, in which the single shell is spiral and the aperture entire, without either notch or siphon, he placed *Haliotis*, *Nerita*, *Planorbis*, *Helix*, *Bulimulus*, *Bulla*, *Turbo*, and *Trochus* -- quite a whimsical assemblage (uniting land shells, freshwater shells, and opisthobranchs. --ed.). In the fourth division, in which the single shell is spiral and the mouth provided with a siphonal canal, he placed *Murex* -- divided as Bruguière had done -- , the strombs, and the helmets. Finally in the fifth division, in which the single shell is spiral, and the aperture terminated basically, are found *Buccinum*, with *Tonna*, *Harpa*, *Purpura*, and *Terebra* as subgenera; also *Voluta* with *Cymbium*, and *Mitra* -- set up later -- as subgenera; also *Cypraea*, *Oliva*, and *Conus*.

KEY TO CUVIER'S DIVISIONS OF THE GASTROPODS. by MKJ

* Shell in many pieces . . . . Chiton
* Shell in single piece
** Shell non-spiral . . . . Patella
** Shell spiral
*** Aperture entire. . . . . Haliotis, Nerita, Helix etc.
*** Aperture with siphonal canal . . . Murex, Strombus, helmets
*** Aperture with basal notch. . . . . Buccinum, Voluta, etc., etc.

The acephalous mollusks are separated on the presence or absence of a shell, the presence or absence of a foot, whether the valves are equal or not, and the condition of the mantle -- thus in accordance with Poli's ideas. The first division contains only Ascidia and Salpa (both non-mollusks. --ed.). All other divisions have shells. In the second division the animals have no foot and the shells are inequivalve: *Ostrea*, *Spondylus*, *Placuna*, *Anomia*, *Pecten*. In the third division the animal has a foot and the mantle is open in front: *Lima*, *Perna*, *Avicula*, including *Malleus*, *Mytilus*, *Pinna*, *Andontites*, *Unio*, *Tellina*, *Cardium*, *Mactra*, *Venus*, *Chama*, *Tridacna*, *Cardita*, and *Arca*. In the fourth division the animal has a foot, the valves are equal, the shell gapes at both ends, and the mantle is closed in front: *Solen*, *Mya*, *Pholas*, and *Teredo*. In the fifth division he placed (the non-molluscan brachiopods. --ed.)

This analysis of Cuvier's first work on the Mollusca shows that it is based upon the critical observations of Pallas, as Cuvier himself admits. He improved on Poli. It is clear that his cephalopods are the *Brachiata* of Poli, his gastropods Poli's *Repentia*, and his Acephala the *Subsilienta* of Poli. Here are also found the improvements introduced by Bruguière on Lamarck's new genera, the number of which was greatly added to in the series of lectures given by Lamarck in the Jardin du Roi.

ARTICLE OF THE MONTH

Dr. Hans Bertsch in Sea Frontiers, vol. 21, Sept.-Oct. 1975, page 281, points out in his article, "A snail that eats sea stars," that quite a number of gastropods in various parts of the world feed on, are commensal with, or are parasites of sea stars. This is like the old saying of "man bites dog," since generally the reverse is the case. He notes for example that *Charonia nudifera* feeds on the sea stars *Linckia* and *Acanthaster planci* in the Indo-Pacific, the Japanese snail *Asterophila* lives inside the body cavity of the arms of *Pedicellaster*, and the *Thyca* snails occur mainly in the tropical water of the Western Pacific where they parasitize sea stars such as *Luidia*, *Stellaster* and *Linckia*.

Henry D. Russell

TIMOR TRAVELOGUE

Ailsa Cornelius

When we lived in Gove, a bauxite mining area on the western side of the Gulf of Carpentaria, we spent several holidays in Portugese Timor, 400 miles north of Darwin. Our only requirement was a valid passport, a visa from the Portugese Consulate in Darwin, smallpox, cholera and typhoid shots, and at that time, 1971/72, conservative tropical wear -- for women, no shorts, no trousers, no bikinis, no mini skirts, and for men, no restrictions.

Timor is a timeless country, slow, hot and beautiful. It is a poor country known mainly for sandalwood, teak and coffee, but it left us wondering whether our modern civilisation, or rat race, was really the way to live. The Portugese govern it and run the hotels, the Chinese are the shopkeepers, and the Timorese are the native population, existing mainly on what little they can grow and also in employ as houseboys in the hotels and private Portugese homes earning about Aust. $3 per week. The Portugese army also had a number of outposts on the island and in the south near Betanu is a small group of Americans drilling for oil, which has not yet been found in marketable quantities.

Our first Timor holiday took us to a small airport and the town of Baucau, where the animals had to be cleared from the strip before we could land. All customs and clearance facilities took place in a small tin shed filled with Portugese officialdom and red tape. From the airport we were taken to a very beautiful Portugese style hotel, where our room had its own houseboy, a very efficient middle-aged Timorese. Mary, then four, very quickly learned to make full use of the houseboy to fetch and carry for her and escort her up the steep flights of stairs. Our tariff of $10 per adult per day covered three main meals (varying from 3 courses for breakfast to up to 5 or 6 courses for dinner), morning and afternoon tea if we required it, and a daily laundry service, which included beating the clothes on stones, rinsing them, spreading them on the grass to dry, then presenting them later that day, ironed and spotlessly clean. Stained clothing was not returned till the stain had been removed!!

Only one day of this trip was spent at the beach at a picnic put on by the Hotel Manager for his guests. Lunch was set out on tables complete with hotel silver, white cloths, glassware, and a 4 course meal complete with wine which was served by the houseboy, under coconut palms, by a beautiful white beach and clear tropic sea. Luxury living indeed!

That day I found no live shells, but had plenty of beach worn specimens to choose from. Among those I could identify were two specimens of Cypraea helvola, a worn specimen of what could be Cypraea tigris, a good specimen of Conus virgo, and some I have tentatively recognised as Conus striatus, Conus betulinus and Conus lividus. One small worn Stromb found was bright red round the aperture. I also picked up reasonable washups of Nassarius arcularius, Nassarius coronatus, Niotha bicolor, Plicarcularia granifer and Plicarcularia thersites, Mitra cucumerina and Mitra lugubris.

Later at the market where bargaining is a necessary part of buying, I bought 3 large live Trochus shells for 1 cent each. Our houseboy cleaned them for me, threw away the opercula, and was horrified when I wanted only the shell and refused to eat the flesh. His English and our Portuguese was limited to one or two words but he made it clear that he thought I was rather odd to want only the shells. Occasionally live specimens of Cypraea tigris and Ovula ovum are available at the market but unfortunately not on our visit. Large specimens of Ovula ovum are hung along with intricate carvings over the high pitched thatched roofs of the native houses to ward off evil spirits.

Our strongest impression of Timor will be the open air markets with hundreds of Timorese squatting on the ground selling their 50c worth of wares - usually maize, vegetables, sweet potatoes, bananas, betel nut, tobacco (horrible stuff, according to John, who smoked some), beautiful pottery bowls and water jars, woven cloths and occasionally shellfish, wood, buffalo horn and tortoise shell artifacts, woven baskets, and silverware made from melted down Australian 2/- coins. Many Timorese would travel for 2 days on horseback or on foot to take their meagre goods to market, spend a day buying, selling, catching up on gossip, perhaps betting on the cock fight, then spend 2 more days travelling home.

Our last two holidays in Portuguese Timor were to Dili on the coast where Indonesian islands could be seen clearly on the horizon, and then up to Maubisse in the mountains. In September 1972 we spent two weeks at Maubisse (hotel) where our host, an Australian, took us by 4 wheel drive vehicle to remote parts of inland Timor where tourists were unknown. The roadsides were pink with roses planted by a former governor, and it was here that we met two of the wealthiest chiefs in Timor and were offered the now familiar native hospitality - strong black coffee, sweet cakes, buffalo meat and brandy. We only met these chiefs because of the respect and esteem they held for our Australian host - they hated the Portuguese.

Half a day's drive from Maubisse, over narrow, rough roads, took us to the Timor Oil camp where we were shown over the camp and drilling rig by the Americans there. Another short drive and we were at the beach at Betanu - it looked like paradise. An army camp nearby had 'developed' Betanu as a recreation center. Their center was built entirely from bamboo on the sand at the edge of the beach among beautiful sago palms and tropical vegetation. It was three separate buildings, almost camouflaged by tall stands of bamboo - a toilet and washroom, a kitchen hut containing an open fireplace, and a dining and sleeping hut containing table, benches and bunks. Even the table was woven from bamboo canes. We dined by firelight, keeping a wary eye for wild monkeys, slept on the beach and woke at dawn to the sound of waves breaking on the reef. By breakfast the tide was low enough for me to get onto the reef for a brief two hours before the rest of the party decided they had to move on, shells or not.

In that time I managed to collect specimens of the more easily cleaned shells bearing in mind that I had only a few days in which to have them clean, and free of smell before going through customs formalities. As the tide was going out and would not have been low for another hour or two, my collecting was regrettably limited to the edge of the reef where there was a lot of rock and seaweed but little coral. Most of the cowries found were under rocks near the shore and became more scarce as I moved further out on the reef. Cones were much the same - plentiful, crawling about shallow rock pools near the shore and scarce further out. However, I found a number of Cypraea isabella, one of my favorite cowries, and took 3 specimens. Another prized specimen was Cypraea staphylaea and 2 specimens of Cypraea lynx. There were many other common shells there and some of the more common cowries, such as Cypraea moneta and Cypraea annulus, but because of time limits I concentrated on those specimens not already in my collection at Gove. A large number of the shells on the reefs at Gove were also common to the Timor area so it was simpler to note their existence and leave them alive. Most of the cone shells were small and I managed to collect specimens of Conus marmoreus, Conus imperialis, Conus litteratus, Conus generalis and Conus ebraeus. Some of these were not completely clean before we left so had to be abandoned. I did not have the use of the kitchen, otherwise might have risked boiling them, but had to rely on the ants to help with the cleaning.

At one stage I did consider taking them back to Australia uncleaned, but the customs men, ever alert to the drug traffic problem, give all travellers from Timor a thorough check out so it would have been senseless to smuggle in a handful of smelly cone shells.

We have promised ourselves that we will go back to Portuguese Timor again, but with the present civil strife there, that seems a remote dream. The excellent coffee, delicious Chinese food with lots of garlic and chili, the whole atmosphere of the island, and for me the reef at Betanu, will lure us back one day.

Reprinted from POIRIERIA,
a shell periodical of New Zealand

THE CASE OF TRIODOPSIS FOSTERI F. C. Baker

Morris K. Jacobson

In 1932 (46 NAUTILUS 48) Frank C. Baker of the University of Illinois described what he called a "new race" of land snail under the name Polygyra appressa fosteri from Harbin County, Illinois. Pilsbry in 1940 (1 Land Mollusks of North America 832) put the new taxon in the genus Triodopsis and made it a full species, since he found that there were important differences in the internal anatomy between it and appressa Say. T. fosteri is a midwestern shell species ranging from Indiana and Iowa to Arkansas and Louisiana.

Sometime in the 1860's, W. G. Binney planted some specimens in his garden at 202 Union Street, Burlington, New Jersey. The species flourished mightily, and when I visited the area with Jack McLellan about 10 years ago, we found numerous specimens, especially in empty city lots, even right in the center of town. I brought back a good lot and freed them in my back yard in Rockaway Beach. My yard already had a vigorous population of Cepea nemoralis (See NOTES, 1966, No. 119, pp. 5-6) as well as some native snails like Anguispira alternata and Mesodon thyroidus. But when Triodopsis fosteri appeared, it quickly took over, so that today the *Anguispira* and *Mesodon* have completely vanished, and I find at least 20 *fosteri* for every *Cepea*. This, I thought, was just as well, since *fosteri*, like most native American snails, feeds largely on the mycelium of fungus and rotting leaves, not on growing plants.

But not entirely. This year I discovered to my distress that *fosteri* is also very fond of young zucchinis. Once the fruit manages to reach a certain size, it is left alone and grows nicely. But most young ones, just when the flower drops off, are penetrated at the tip by the snails and the entire inside eaten out. Interestingly enough the *fosteri* I pulled out of the vegetables were larger and more vigorous than their fungus-eating brothers. I also grew cucumbers, tomatoes, beans and eggplant as well as some flowers, but only the zucchini were attacked. I should also state that this is the second year I planted zucchini, but up to now my vegetable plot, though well populated with *fosteri*, has never suffered any loss.

Triodopsis fosteri, except in the eyes of a land shell enthusiast is not a very handsome shell. It is about 4/5 inch in diameter, rather depressed, dull brown in color with a white, reverted lip armed with a long, white, bladelike lamella, with coarse axial sculpture, and a closed umbilicus. It looks very much like numerous other American ground shells.

MORE ABORIGINAL SHELL NAMES:

This time from the Campa, the largest and most important tribal group in the Peruvian Montana. *Strophocheilus popelairianus* Nyst (a large land snail) is called "pomporó" or "mapóto"; *Thaumastus melanocheilus* Nyst (like the three following species, a large and beautiful bulimulid) is called "*sankíro kimonakíri*" or "*sankíro* irihanínaki"; *Plecocheilus floccosus* Spix is called "cairináki" - said to "be eaten by some"; *Corona regina* Férussac is called "kepishánkiri" (notice the endings -kiri and -aki which seem to have something to do with snails); and Asolene species (an ampullariid) is called "tiontííki." A shell depilator (probably a pair of bivalve shells) is called "chopíroti." The author of the paper in which I found these items states in a footnote: "Snails are listed here, generally, in order of decreasing size. It appears that the Campas give more than one name to the same species on the basis of a noticeable difference in size."

From: "Campa Cosmology, the World of a Forest Tribe in South America," by Gerald Weiss, 1975. Anthropological Papers of the American Museum of Natural History, volume 52, part 5, pages 219-588.

mkj

As this issue goes to press we are still having some publication and mailing problems. By the time you receive these NOTES we hope they will all be straightened out. Meanwhile, we appreciate your patience.

NEW YORK SHELL CLUB INC.

FOUNDED JAN. 1949

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NEXT MEETING: SUNDAY, MARCH 13, 1977, at 2:00 PM

PROGRAM: INDO-PACIFIC CONES, a color slide program by William E. Old

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SHELL-SOCIAL SCHEDULED FOR APRIL 17th

Mark your calendar now for the April meeting -- our annual Shell-Social which is always the high spot of our year. This year we are planning to have a film, or films, in addition to the auction, raffle, etc. As in previous years, we are looking forward to your generous donations of shells, shell literature -- and cakes.

NOTE the DATE: April 17th, the THIRD Sunday of April.

EUROPEAN MALACOLOGICAL UNION, 1977

The sixth congress of the UNITAS MALACOLOGICA EUROPAEA will be held in Amsterdam at the Free University in the period 15 - 20 August.

Apart from the usual items on the programme, such as a European Invertebrate Survey meeting, field excursions, and the U.M.E. General Assembly, we have decided to have twelve invited lectures (in the course of four morning sessions) by major specialists in addition to the usual contributed papers. During the afternoons there will be ample opportunity for the normal type of paper. When the number of contributions is high special sections will be organized for particular disciplines.

All malacologists, i.e., all persons working with molluscs, whether in a professional capacity or privately, are invited to attend the Amsterdam congress. Fees will be: f 100.--(approx. twenty pounds) for full congress members, f 20.-- for accompanying persons, and f 50.-- for student members. There will be sufficient hotel accommodation in various categories. Nearest camping is at a distance of 1,5 km. For further information apply to: Kongresbureau V.U., De Boelelaan 1105, Amsterdam, the Netherlands.

From: The Journal of Molluscan Studies,
Vol. 42, Part 2, August 1976, p. 304

HISTORY OF MALACOLOGY TO 1825 (X)

Ducrotay de Blainville

Translated and adapted by M. K. Jacobson

JEAN BAPTISTE PIERRE ANTOINE de MONET, CHEVALIER de LAMARCK

(Part 1)

(INTRODUCTORY NOTE: The name Lamarck is known to all biologists as the father of a pre-Darwinian theory of evolution now generally discounted. But his name is especially familiar to all shell collectors as the author -- often abbreviated to Lam. or Lk. -- of innumerable shell species and genera. Unfortunately many of his generic names were replaced by those introduced by Röding who predates Lamarck by a single year. It will be interesting to see what Blainville, a contemporary of Lamarck, thought of his work. Ed.)

It was in the spring of 1798 (Floreal 11, year 6 of the first French Republic, that Lamarck began the publication of his works on the malacozoa (= mollusks. Ed.) in a memoire in the JOURNAL d'HISTOIRE NATURELLE, Vol. 1. Here he divided the genus *Sepia* L. into three genera: cuttlefish, squid, and octopus, basing his divisions on differences in their structure. At the end of 1799 (Frimaire 21, year 7) he published his PRODROME d'une nouvelle classification des coquilles, based on his study of molluscan generic characteristics in which he created many new genera. In this work Lamarck stated that he accepted the principles and the point of view of Bruguière while also benefitting from Cuvier's observations on the structure of the animals, but he found himself compelled to restrict generic characters more exactly and to erect many new genera. As a matter of fact Lamarck increased the 62 genera of Bruguière in the ENCYCLOPEDIE METHODIQUE to 123, almost doubling the number. Like Bruguière he still divided the shells on their number of valves, that is: univalves, bivalves, and multivalves, but he arranged them in inverse order from Bruguière. Like Bruguière, he also divided the univalves into unilocular and multilocular (i.e. one-chambered and many-chambered, or true gastropod shells and nautiloid shells. Ed.). In his treatment of the unilocular shells he diverged a bit from his predecessor and divided them into two sections, depending on whether the aperture is notched or channeled, or entire. In the first section he placed *Terebellum* which he separated from *Bulla* of Bruguière; *Ancillus*, different from Geoffroy's genus of the same name which he later called *Ancillaria*; *Mitra*, *Columbella*, both separated from *Voluta* Brug.; *Nassa*, separated from *Purpura* Brug.; *Harpa*, separated from *Buccinum* Brug.; *Pteroceras*, *Rostellaria*, both separated from *Strombus* Brug.; *Fusus*, *Pleurotoma*, *Fasciolaria*, all separated from *Murex* Brug.; and *Pyrula*, separated from *Bulla* Brug.

In the second section (i.e. gastropods with lips entire. Ed.) he added the following genera to those of Bruguière: *Monodonta*, *Pyramidella*, *Cyclostoma*, *Turritella*, *Turbo*; *Janthina*, separated from *Helix* L.; *Agathina* (*Acathina*. Ed.); *Lymnaea*, *Melania*, *Ampullaria*, *Auricula*, all separated from *Bulimus* Brug.; *Helicina*, *Sigaretus*, both separated from *Helix* L.; *Stomatia*, separated from the Haliotidae; *Crepidula*, *Calyptracea*, separated from *Patella* Brug. However, he also added to this section, as Bruguière had done before him and in spite of Cuvier's clear exposition showing them to belong elsewhere, the following: Dentalium, Siliquaria, Vermicularia, Clavagella, and Argonauta. (Siliquaria and Vermicularia are today still considered to be gastropods. Ed.) To the multilocular, Lamarck added the following genera: Spirula, Orthoceras, Planorbites, Baculites, and Orthoceratites (all except the first are fossils. Ed.).

In the bivalves, Lamarck followed Bruguière and divided them into regular and irregular. In the irregular group he put only two new genera, Vulsella and Malleus, both separated from Avicula and close to Anomia and Crania (the last a brachiopod. Ed.). In the group of regular shells he set up a great many new genera: Glycymeris, taken from Mya; Sanguinolaria from Solen; Cyclada from Tellina; Meretrix (later changed to Cytherea) from Venus; Lutraria, Paphia, Crassatella, all taken from Mactra; Isocardia from Cardita; Hippopus from Tridacna; Pectunculus and Nucula from Arca; Modiolus from Mytilus; Calceola and Hyala from Anomia. Lamarck divided the multivalves into three convenient sections, and removed Crania from them.

This analysis shows that Lamarck, influenced by Bruguière, did not benefit -- as he well could have done -- from the work of his predecessors and thus failed to establish a natural system for the shells. The same thing is true of the first edition of his work entitled ANIMAUX SANS VERTEBRES, published in 1801. But before discussing this work, it will be necessary to make a few remarks on the table of molluscan sections which Cuvier published in 1799 (Ventose 28, year 7) at the end of the first volume of his LEÇONS d'ANATOMIE COMPAREE (Lessons on Comparative Anatomy).

FOOTNOTE: To learn more about J. B. P. A. de M. de Lamarck, who lived 1744-1829, we turned to the book, SHELL COLLECTING, An Illustrated History (1966) wherein the author, S. Peter Dance, describes Lamarck as one of the world's greatest natural philosophers. We learned nothing of the private life of the famous naturalist, but his portrait on p. 114 suggests a tall, spare, blonde man with an intense personality. Dance reports that he earned his living doing literary work until, at age 50, he was appointed Professor of Zoology in the Natural History Museum of Paris.

At that time he already had a large natural history collection, rich in shells, and most of his descriptions of new molluscan species were based on his own specimens. Later in the book it is noted that the original Lamarck collection contained at least 50,000 specimens belonging to 13,288 species. After his death it was acquired by Prince Massena (Andre Massena, Prince d'Essling (1758-1817), Marshal of Napoleon I. Ed.), who in 1840 sold his large collection (which now included the Lamarck shells) to Baron Jules Paul Benjamin Delessert of Lyon. The wealthy Delessert might be described as a collector of collections, amassing some 150,000 specimens (25,000 species among 300 genera) which he displayed and stored in a large and beautiful gallery. Delessert's heirs presented this collection to the city of Geneva. Today, the shells of Lamarck that are in the Geneva Museum are mostly gastropods; those in the Paris Museum are mostly bivalves. All are still being studied.

Dorothy Raeihle

SNAIL DYES IN OAXACA, MEXICO

Peter Gerhard

(NOTE: This account of the snail dyeing industry in Mexico appeared in 1963 in Bulletin 13 of the Instituto Nacional de Antropología e Historia, in Mexico City (pages 13-14). Hence it may very well be much out of date. It would be interesting to find out if the trade still exists. Translation by M. K. Jacobson.)

In ancient times in the Mediterranean region the purple dye from snails (Murex, Purpura, Thais) was tied up in the minds of the inhabitants with (a) power, royalty, and divinity, and (b) with female fertility. The first of these beliefs also existed in Japan in the 10th century A.D. and possibly also in pre-Columbian America. The belief that color derived from snails can make women fertile seems to exist even now in America.

During colonial times and even up to the present, the indigenous populations from Mexico to Peru have used the purple color from snails to dye certain articles of clothing, especially the wedding gowns of brides. The first mention of this custom in history is found in Ovieda (Nicoya, 1592), but this undoubtedly refers to a tradition that is much older. In the 17th and 18th centuries these colored cloths served as an important article of commerce. Since the 19th century, however, the Indians have been able to buy cloth dyed with aniline colors. Nevertheless they prefer to pay ten times more for cloth dyed by genuine snail colors. Thus this color must have a special significance for them for which there is no substitute.

In the present century several Indian tribes on the Pacific coast -- in Michoacan, Oaxaca, and in Central America and Ecuador -- have persisted in using the dyes derived from snails to color their cloth. The snail most commonly used for this purpose is Purpura patula pansa. Such cloth is still an article of commerce in these regions -- but on a much reduced scale -- among the Huave, Mixe, Zapoteco, Chontal, and Mixteco tribes in Oaxaca. Since 1958 the relatively small trade has been dominated by a small town in Mixteca Baja called Pinotepa de Don Luis. In this town the women harvest, card, and weave the cotton into long white threads. These threads are then formed into skeins, each one containing about 100 meters (about 300 feet) of thread and each selling for 2 pesos per pound.

During the dry season about a dozen boys and men go to the shore, each carrying about 15 pounds of thread to be dyed. The first group appears on the shore at the beginning of November. Formerly they worked near the city of Acapulco, but today they prefer the area between Puerto Angel and Barra de Copalita, Oaxac Province, where they find a number of quiet coves, ideal for both snails and men. They prefer to work during the morning low tides. They say that the color collected during the full moon is better, but many work during the new moon as well. Each man carries from 10 to 20 skeins under his arm, and a sharp stick to loosen the hold of the more persistent snails. They walk along the shore, examining the shady sides of the rocks until they come across a colony of Purpura. The tinter pulls the snail off its rock and blows on it, thus forcing the infuriated animal to retract strongly. As it does so, it exudes a milky liquid which almost fills the mouth of the shell. This liquid is then poured over the cotton skein and the snail carefully replaced on the spot where it was taken. At first there is no color on the threads, but when the skein is exposed to the sunlight, it first turns yellow, then brilliant green, and finally vivid and permanent purple. Normally the juice from six to eight large snails is enough to dye a skein of cotton. Before and after tinting, the skeins are dipped in the sea. The tinters then stretch the threads out and leave them all afternoon in the sun, often until dusk, so that the color can be more even and stable.

For an entire month the tinters go from one cove to another. The following month they return to the first coves and "milk" the snails again. This continues until each skein has been tinted at least once; rarely is the same skein tinted twice. When their work is completed, the men throw their ill-smelling loads over their shoulders and return to Pinotepa. Skeins become much heavier after having been dyed. When the first group returns, others go to the shore to continue the work for two more months. Sometimes all work stops at the beginning of March, but ordinarily a third group of men comes and continues working until the end of April.

Back in their village, the tinters sell the purple skeins (called tishindá cayi yukvá in the Mixteco language) at 40 to 60 pesos a pound, depending on the quality of the color. Taking into account the increased weight of the tinted cotton, a good tinter can earn up to 1,200 pesos for two months of work. Some skeins are sold in Huazolotitlán, but most are sold in Pinotepa de Don Luis.

Sometimes a thin colored thread is used to trim a huipil of white cotton, but the most common use is as a thick thread in the posahuanco, the only article of clothing normally worn by the native women of Mixteca Baja. The garment is 1.2 by 3 meters in size (about 4 by 9 feet), with which the women wrap themselves from the waist down. It is held in place by two sashes. The garments are decorated with horizontal bands of blue, red, and purple. The posahuancos in daily use, in which the cheaper aniline dyes are used, do not cost more than 50 or 60 pesos. The garments with wide bands of snail purple are used only on weddings and other ceremonial occasions and cost between 300 and 600 pesos, depending on the amount of "snail" each one contains. The blue color comes from the indigo plant, and cochineal is sometimes used for red, but not as much as in former years. The posahuancos of Pinotepa de Don Luis are sold in all the neighboring towns and those colored by snail dye are very highly valued.

ARTICLE OF THE MONTH

In an article entitled "Relation entre les plantes aquatiques et les gastéropodes (Mollusca, Gastropoda) dans la région de la centrale nucléaire Gentilly I (Quebec)," Estelle Lacoursière, Guy Vaillancourt and Richard Couture show some interesting molluscan associations. They studied 536 plants of 20 different species, and 37,234 specimens of 10 different species of the St. Lawrence River. Their analysis indicates that prosobranchs have no affinity for plant species, while pulmonates are found mainly on emergent plants. The article appears in the Canadian Journ. Zool. 53 (12), 1975.

Henry D. Russell

FROM THE MINUTES OF THE JANUARY MEETING

Two newspaper clippings, brought in and read by Mart Hulswit, described the result of a snail race held in Australia, and reported on the first underwater arrest, in 1969. The soggy culprit had been collecting abalone illegally off the island of Guernsey, in the English Channel.

The first speaker, Monique Caubere, described a recent successful collecting expedition in the seafood markets of Marseilles. She was there to visit her grandparents, and learned that among the market staples are many varieties of mollusks. With slides and comment she identified at least 16 species, including Ostraea edulis (with green meats) at $10 per dozen. She would have liked to do some offshore shelling, but cold and polluted waters made this impossible.

Mart Hulswit then described a family vacation trip, which included some shelling, to Cayman Brac. During their visit to this small island south of Cuba the Hulswits stayed in a house owned by members Charles and Carol Hesselbach. With the aid of slides, Mart described Cayman Brac in considerable detail, including the flora and fauna. Among the latter were the land snail, Cerion, and marine shells. Two memorable signs that he photographed were the one identifying the "waving gallery" at the airport on Little Cayman, and the one naming What's His Name Road on Cayman Brac. Mart's camera coverage was climaxed by a barrage of magnificent sunsets.

Milton Werner, Recording Sec'y.

TO FATTEN GREEN AND OTHER OYSTERS

Monique was so enthusiastic about the small but delectable green oysters she found in Marseilles that it aroused our curiosity. The information presented below is from Russell and Yonge's THE SEAS.

Two species of oysters are cultivated on the west coast of France: the "Portuguese" oyster, Ostrea angulata, which grows to at least 3 inches, and the small "native" oyster, Ostrea edulis Linné, with roundish shell of 1½ inches or so, more delicate in flavor, and sometimes green.

"Originally the native oyster was exclusively cultivated in France but of recent years it has been almost completely ousted in the more southern beds by the Portuguese oyster. . . In the more northern beds, mainly on the north and south coasts of Brittany, the native oyster is still cultivated.

The "fattening" of oysters forms a separate industry in certain parts, the most important of which is in the district round the mouth of the River Seudre, near Marennes and La Tremblade. Here the land is flat and clayey and in it are dug series of shallow basins or "claires," into which open canals through which sea water enters during spring tides. During the intervening periods the water remains stagnant and in summer becomes very hot and, by evaporation, very salty, conditions which result in a tremendous increase in the microscopic plant life, notably diatoms, which forms the ideal food for the oysters which are (brought in from the open beds and) laid on the bottom of these claires. These grow and fatten at an exceptional speed and soon reach a remarkable size, when they are taken out of the claires and placed in stone tanks, known as "bassins de degorgement," containing fresh, clean sea water in which they are left for several days in order that they may become thoroughly cleansed internally.

It is in the claires at Marennes that the well-known green oysters are produced. These obtain their colour, which has become known as Marennin, from a particular diatom named Navicula fusiformis var. ostrearia. ... These green oysters are considered a delicacy in many places and command a high price."

From: THE SEAS, by F. S. Russell and C. M. Yonge,
London 1928, reprinted 1958. (cf. pp. 300-301)

In 1959 Fish and Wildlife Service experimented with the planting of Ostrea edulis in waters of the Maine coast. In 1962 an article by Donald Bernard in UNDERWATER NATURALIST, Vol. 1, No. 1, reported the first underwater check on the progress of this European species in American waters: "A total of 54 Ostrea edulis were counted in a 2 square acre area" giving promise of adaptability of Ostrea edulis to the colder waters of the Maine coast. However, to date we have no further news of the project. Mr. Bernard continued: "Healthy Ostrea edulis are very flat and grow to a large square shape similar to a scallop shell. However, the oysters that were found were 5" in diameter and 2½" thick. Questions are still to be answered as to the changes in growth pattern in this new environment."

JOHN DYAS PARKER

Dear Friends:

We are saddened to report that Jack Parker died on Wednesday, February 2, 1977 of a sudden heart attack. He had long fought a valiant battle against poor health, and had been an ardent and enthusiastic volunteer worker here at our museum. The malacological archives were of his making and grew in importance under his care. We hope we can soon find someone willing to carry on his work.

It has been suggested that a John Dyas Parker Fund be set up to help continue his archive work. Contributions to this fund, made out to the "Delaware Museum of Natural History" are tax deductible, and, we feel, would be an appropriate memorial.

Archive matters are temporarily under the care of our librarian, Sophie Homsey.

Sincerely,

R. Tucker Abbott

John Dyas Parker was born in Woodhaven, New York, in 1915. His interest in mollusks, and particularly fossils, permeated all his adult life. For a number of years he was an assistant in the Department of Mollusks, ANSP, and also served as assistant editor of the NAUTILUS. In recent years he accomplished his work although he was dependent on a wheelchair and had difficulty handling a pen. Let us continue to send material, both historical and recent, to the already invaluable archives.

dr

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NEW YORK SHELL CLUB NOTES No. 230 March 1977 Page 1

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in THE AMERICAN MUSEUM OF NATURAL HISTORY, Room 319, with the following exception:

NEXT MEETING: SUNDAY, APRIL 17, 1977, at 1:00 PM
THE PLACE: BROADWAY DANCE STUDIO (Phone: As.4-1503)
31-08 BROADWAY
ASTORIA, QUEENS, NEW YORK (Directions below)

PROGRAM: * AUCTION * DOOR PRIZES * BARGAIN TABLE *
* RAFFLE * REFRESHMENTS * BUFFET SUPPER *

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NEW YORK SHELL CLUB'S ANNUAL SHELL-SOCIAL APRIL 17th

NOTICE that our party will be held NOT at the Museum, but at the Broadway Dance Studio, 31-08 Broadway, Astoria. We thank our member Dorothy Jensen for making her studio available to us for the occasion.

In addition to the auction, bargain table, raffle and door prizes we hope to have a film, but at this writing we are not able to confirm. A cocktail hour will precede the buffet supper (there will also be punch) and, ladies, we look forward to your donations of those luscious homemade cakes to top the meal.

Remember that your donations of shells, books, papers, artifacts, any shell-related item or whatever, are needed to make the afternoon a success. No item is too large or too small! Activities start at one o'clock, so bring your donations in a little before then so that they may be displayed.

We hope to make the party self-supporting. Thus, a donation at the door of $4.50 per adult, $2.25 for children under twelve, will go toward the cost of chair and other rentals, and our sumptuous buffet. Members may bring guests who make the same contribution.

DIRECTIONS:

The studio is on the 2nd floor of the building, corner of 31st St. and Broadway. From Manhattan, take the B.M.T. subway, ASTORIA line to the BROADWAY stop and you're right there! I.R.T. FLUSHING line to Queensboro Plaza, free transfer to B.M.T. ASTORIA line. From Jamaica, IND. subway to Roosevelt Ave., free transfer to I.R.T. FLUSHING line to Queensboro Plaza, transfer again to B.M.T. ASTORIA train. BY CAR: Queensboro Bridge to Northern Blvd. to 31st St., left on 31st St. (under the EL) to Broadway. Or Triboro Bridge to the first exit in Queens, turn right under the Elevated along 31st St. to Broadway. From Long Island, take Grand Central Parkway to the last exit before the Triboro Bridge, go a short distance along Astoria Blvd. to 31st St., turn left under the EL to Broadway -- a distance of about 6 blocks.

So come ye all, prepared for a good time. It is not a long trip -- only about twenty minutes from Times Square. Bring your shells and things and take others home. If you have any questions about getting your donations to the studio, telephone Veronica Johns at LE.2-8690.

FROM THE MINUTES OF THE FEBRUARY MEETING

The first supply of the Club's first badge - a lapel pin - was on hand, and it sold briskly at $1.25 each.

The first speaker, Monique Caubere, described a fossil-collecting trip to Waynesville, Ohio, during last summer's AMU meeting. In a bank created by a road cut, she reported, are an incredible number of fossils, many of them molluscan. A sampling of her finds was on display. She traced the ecological changes in that area of the country as revealed by the fossil record, starting with the Ordovician Period, and reviewed the types of fossil specimens: unaltered, replacements, casts, molds, incrustation, mummification, tracks, trails and burrows. She also offered practical suggestions on collecting equipment and safety precautions.

The subject of the second presentation, by Bob Janowsky, was Freak Cowries. Since the locale of most of the specimens he described and illustrated is New Caledonia, he opened with a few slide photos of rare Conus of that area. He introduced his main theme with a picture of a melanistic Cypraea mauritiana niger which is one of only three known to be as dark in color. It had been sold earlier in the month for $3,000. Noting that many of his illustrations had been taken from the French book, "Mysterious Cowries of New Caledonia," he showed a number of slides depicting melanism, humped dorsums, elongated and curved rostrums, and depigmentation. He noted that all melanistic cowries of New Caledonia are found inside the reef along the south shore of the eastern end of the island. New Caledonians, he said, insist that melanism does not occur anywhere else in the world, but Bob, for one, disagrees. In point, he showed a photo of a Cypraea pantherina from the Red Sea which is typically melanistic in appearance, and is so classified.

At the end of the day's program Bill Old showed a few slides of particularly interesting animals in zoos he had visited recently.

Milton Werner, Recording Sec'y

EARLY PHARMACOLOGY: One of Pliny's remedies for headache, which competes with the bones of a vulture's head or the brain of a crow or an owl, is a plaister made of slugs with their heads cut off, which is to be applied to the forehead. He regards slugs as immature snails, whose growth is not yet complete (nondum perfectae).

Cambridge Natural History, III:120, London, 1895

THE BEAUTIFUL, POISONOUS CONES

by Roger Dunn

In most ways specializing in the Conidae makes a very satisfying hobby. Cones are beautiful. They come in many species and varieties. They are large enough to be appreciated but small enough to require little room. For the most part they are inexpensive, but there are enough rare and expensive models to afford an adequate supply of status symbols. Finally, they are so variable that they offer a real challenge in identification.

There is just one major drawback: The cone collector inevitably gets tired of two questions -- "Do you have the poisonous cone?" (singular species) and "Which are the poisonous cones?" (plural species). The first refers to the so-called "Cloth of Gold" cone -- *Conus textile* Linné - for that is the one always used in those great classics of literature in which the victim is murdered by placing this cone in his bath water. The other can be traced to a paragraph that seems to have been standard equipment in pseudo-scientific shell books since Chemnitz and simplifies the whole problem by blaming it all on just five cones: -- *Conus textile* Linné, *tulipa* Linné, *aulicus* Linné, *marmoreus* Linné, and *geographus* Linné. Note that these are all Linnaean cones and consequently among the first cones named -- just the sort to inspire jealousy among other cones and engender malicious gossip. Clearly, they deserve a new trial.

At our 1969 shell show Neil Hepler's Smithsonian-Award exhibit included the following list, prepared by Dr. Alan Kohn, of verified *Conus* attacks on humans:

Conus geographus -- 15 stings, 8 fatal, 4 near-fatal, 3 unknown.

Conus obscurus (a 1-inch shell) -- 7 stings, 2 near-fatal, 5 less severe.

Conus textile -- 5 stings, 2 fatal, 2 near-fatal, 1 unknown.

Unidentified -- 5 stings, 3 fatal, 1 near-fatal, 1 unknown.

Conus tulipa -- 5 stings, 3 near-fatal, 2 less severe.

Conus pennaceus -- 1 sting, near-fatal.

Conus marmoreus -- 1 sting, outcome unknown.

Conus sponsalis (1-inch) -- 2 stings, less severe.

Conus quercinus, *aulicus*, *litteratus*, *imperialis*, *lividus*, *catus* and *pulicarius* -- 1 sting each, all less severe but painful for up to a week.

Of the traditional five, *geographus* and *textile* are convicted of murder as charged, *tulipa* is sentenced for aggravated assault, and *aulicus* and *marmoreus* are released on probation. Nine new criminals have also been apprehended, and one gang with five offenses is still at large.

Actually, ALL cones are poisonous; that's how they make their living. They are all carnivores, and they have developed special poison equipment that looks and operates like a harpoon but kills almost instantly. Some live on various worms -- some on other gastropods. *Marmoreus* and *textile* will kill and eat other cones as big as they are. And a number will spear moving fish and eat them.

This seems a good trick for anything as slow-moving as a snail, but it's a matter of careful stalking, aiming, and then BAM! -- after which he swallows his prey whole through his elastic proboscis.

But it is NOT true that cones are the ONLY poisonous mollusks as often stated. The families Conidae, Terebridae, and Turridae all have this poison equipment and make their livings the same way. These three families are grouped in a superfamily called the Toxoglossa. Glossa means "tongue," and toxo is a curious pun with two roots. In some combinations the root intended is the Latin toxicum, meaning poison; in others it is the Greek toxon, meaning arrow. In this case either meaning will do -- poison tongue or arrow tongue.

Even these three families don't exhaust the list of poisonous mollusks, however, for certain species of octopus are also poisonous. One man in Australia was killed by the bite of an octopus with an arm span of only six inches.

However -- Dr. Henry Parrish of the University of Missouri studied U.S. coroners' statistics from 1950 to 1960. He found 460 deaths from poisonous bites and stings. Number 1 killer was the bee, with 124 deaths; number 2 the rattlesnake with 94; number 3 the wasp with 69.

Reprinted from TIDE LINES, February 1971, by
permission of the St. Petersburg Shell Club.

BILL OLD SPEAKS IN DEFENSE OF Conus textile:

Conus textile has been maligned, killer cones having been identified by unknowledgeable persons as textile when they were actually geographus. ... In the laboratories workers have made varying observations; in one case the textile's fluid was not toxic to the laboratory mice.

Eighty percent of the Conus are worm eaters. The rarest, about five or six percent, are fish eaters and have the most virulent toxin. The balance, including all those with tent patterns, eat mollusks.

In a personal encounter Cliff Weaver related how he had collected Conus obscurus and put them under his hat. He reported that the attacks on his head felt like bee stings and that he was not particularly affected. It is not recommended that anyone follow Mr. Weaver's method of carrying cones, of ANY species, as no one can be sure of even a degree of immunity.

AN OBSERVATION OF A LIVING Conus geographus:

Mrs. Isobel Pert of Madang wrote about an unusual find in June 1962:

"One night I found a large Conus geographus struggling along encumbered with what at first glance appeared to be a sort of growth or semi-transparent mass. Upon dropping the animal into a plastic container I was amazed to see it disgorge a 13 inch long eel as thick as one's finger. Examination showed that the eel had two distinct poison barbs embedded in its body, one under the neck and one towards its tail. They were like a small sliver of glass protruding almost ¼ of an inch and surrounded by an angry bruise where they had entered the flesh.

I decided to bottle both and dropped the cone into Metho. It contracted, but slowly enough for me to see it extend a ½" long trunk which stiffened and I could see the dart and barb distinctly. Also a minute drop of liquid ran down the dart before being shot several inches into space.

I treat these shells with great respect - they would be about my most common larger shell. I find an occasional Conus aulicus whose spear is larger than that of geographus and it has a bright red poison sac."

AUSTRALIAN NEWSLETTER 10(39)p.3, Oct. 1962

ALBERTO CARCELLES

The sad news was contained in a letter to Karl Jacobson:

> Dear Karl:
>
> I returned recently from a trip to Argentina. One of the purposes of my trip was to visit Alberto Carcelles who I knew was very ill. I found him without hope for recovery and I kept company with him during his last ten days. He died on January 23rd in Alta Gracia, Cordoba, where he resided since his retirement.
>
> Since you knew him I thought I should let you know, and perhaps you might give a notice of his passing in the Notes of New York Shell Club.
>
> Juan José Parodiz

Dr. Carcelles was one of the outstanding authorities in the study of the rich molluscan fauna of South America. We recall, with sadness now, the last time we saw him. This was at the AMU convention in 1965 which was held on Staten Island, New York. He proved to be a kind, gentlemanly, considerate and most knowledgeable specialist who was anxious to discuss with and help anyone interested in his speciality. This is a personal loss to all who knew him and a serious loss to science.

mkj

NEW PUBLICATION:

INDEX TO THE BULLETINS OF THE AMERICAN MALACOLOGICAL UNION 1934 through 1974, compiled by Margaret C. Teskey, published by the A. M. U. Price $6.50 postpaid. Remittances should be sent to Mrs. Myra L. Taylor, Treas., 7602 McCullough Ave., San Antonio, TX 78216.

This excellent index is of use not only to persons interested in referring to the BULLETIN (formerly called ANNUAL REPORTS) for research reasons, but also those who like to skim over its pages to see how much valuable material the annual meetings produced and to recall fondly the many good times they had there. The index consists of several parts: a calendar of the time and place of each of the 42 meetings of the AMU (through 1975); a complete alphabetized author index of papers listed; and finally a reference index to 13 subject categories treated in these reports. In short, this well-printed index is well worth the moderate price.

mkj

HISTORY OF MALACOLOGY TO 1825 (XI)

Ducrotay de Blainville

Translated and adapted by M. K. Jacobson

CUVIER (Part 2)

NOTE: The following installment of the HISTORY deals further with the work of the famous anatomist Cuvier. It demonstrates that even at this early stage of the development of the science, Cuvier was still able to make some wise taxonomic decisions. As was generally believed in his time, the ascidians, barnacles and several other non-molluscan creatures were thought to be mollusks. It is surprising however that Cuvier still maintained the incorrect division of mollusks into naked and shelled -- as Linnaeus had done -- in the face of abundant proof that this was incorrect. mkj

In his LEÇONS we see that Cuvier, following the PRODROME of Lamarck, as far as the genera were concerned, characterized much more clearly the divisions which he had proposed in his own TABLEAU ELEMENTAIRE. He called his three principle divisions (cephalopods, gastropods, and Acephala -- including the bivalves) families. The cephalopods remained unchanged. The gastropods were still divided into naked and shelled but the naked gastropods included only Thalis, and Lernaea (neither of which is a mollusk, the first being a tunicate, the second a copepod. Ed.) Two new genera were added: Testacella of Faure-Biguet, and Sigaretus. Such an arrangement is quite unsuitable. The Conchyliophora (= shell-bearers. Ed.) are arranged as in the TABLEAU with the minor difference that Cuvier called the chitons Multivalves, the limpets Conivalves, and all the other univalves Spirivalves. The Spirivalves were divided into three sections, based on whether the aperture was entire, notched, or channeled.

The Acephala are likewise only little changed from the TABLEAU. They are divided primarily into naked and shelled. (NOTE: the naked Acephala are all non-molluscan ascidians. Ed.)

The shelled bivalves are more naturally placed than in the TABLEAU, being divided into four sections. The first section, in which the mantle is open in front, is in turn subdivided into four subgroups depending on whether or not the valves are equilateral, the shape of the foot, and the presence of siphons (tubes) as in Poli's work. The inequivalve division contains the same genera as in the TABLEAU and, in addition, a new genus called Lazarus, probably established on the species Chama lazarus Linné and thus wrongly placed. (I found no Lazarus Cuvier, but Lazarus Gray 1854, now a synonym of Carditamera Conrad, 1838. Ed.) The second or equivalve division is provided with a crawling foot and includes Anodonta and the naiads. The third division, of equivalves with a byssus-forming foot, contains Lima, Perna, Avicula, and Mytilus. And finally the fourth division, of equivalves with a foot that most often cannot spin a byssus, contains Venus, Tellina, Cardium, Chama, and Arca. The second section, where the mantle is open only at the two ends, contains the same genera as in the TABLEAU. In the third section the mantle is open in front and both foot and siphon are lacking. The fourth section contains the non-molluscan barnacles.

* *

FÉRUSSAC

In the same year Cuvier's work was published, that is in 1800, d'Audebard de Férussac the elder, who perhaps was not fully aware of the latest progress of science, published an essay in Volume 3 of the MÉMOIRES de la SOCIÉTÉ d'ÉMULATION, in which he presented a conchological method based on both the animal and the shell. Here he stressed the necessity of using both features in establishing families and genera. In addition he advanced several new diagnostic ideas to be considered, such as the complete or incomplete state of what he called the "spiral cone" in the shell and the point of attachment of the foot, whether under the neck or under the stomach of the gastropod. Otherwise he did not much advance the method of studying the land and freshwater mollusks (which he called Musculites). Like Adanson he separated them into two sections and these he subdivided into almost as many orders as his genera. He proposed only one new genus, Helico-limax, which was intermediate between Limax and Helix, but he wrongly confused it with Testacella of Faure-Biguet. Bulin of Adanson he called Bulla which Draparnaud had previously named Physa. Otherwise Férussac followed Adanson and Müller.

NEW HOPE FOR VICTIMS OF SNAIL FEVER OR SCHISTOSOMIASIS

An advance in the effort to induce immunity to schistosomes was recently reported by a University of Puerto Rico group headed by Dr. George V. Hillyer. The researchers found that a complex of polyadenilic-polyuridylic acid (poly AU) is a potent stimulent of antibody production when inoculated in mice with an antigen from the fluke Fasciola. One injection reduced the worm burden in infected animals by 67 percent and two inoculations resulted in a 74 percent reduction. The investigators also found that immunized mice had antibody levels to schistosomes four or more times higher than those in non-immunized animals. Dr. Hillyer and his associates in the Minority Biomedical Support Program funded by the National Institute of Health's division of health resources are now trying to purify the antigen or antigens involved in this protection. It is hoped that this work will lead to the development of a vaccine that will provide total protection against schistosomiasis, which currently afflicts an estimated 300 million people.

From: MD, Medical Newsmagazine, 21(2) February 1977
Submitted by NYSC member Dr. Walter H. Jacobs

Lamarckia, n. Bot. A genus of European grasses having as the only known species L. aurea, the goldentop. Syn. Achyrodes.

Lamarckism, n. Biol. The theory of organic evolution proposed and maintained by the French naturalist Lamarck (1744-1829), that changes in environment cause changes in structure of animals and plants, especially by inducing new or increased use of certain organs or parts, resulting in adaptive modification or greater development, and inducing also disuse and final atrophy of other organs; that such acquired characteristics are transmitted to offspring.

Webster's International Dictionary

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